JANUARY 15, 1958

TECHNOLOGY DEPT

Telephone Engineer

AND MANAGEMENT

THE TELEPHONE INDUSTRY MAGAZINE

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1/62 #2

TRAFFIC DEPARTMENT SUPERVISION, BY A. H. STEELE

Transmission - Our Principal Product, by J. B. Spratley

take our CUSTOMERS' WORD for it-

Customer satisfaction is one reason why L. M. Berry and Company has successfully enjoyed the association of leading Telephone Companies throughout the United States for 47 years.

Since 1919, L. M. Berry and Company has been handling the Directory Advertising for the La Crosse Telephone Company, an associated company of the Central Telephone Company . . . one of many of Berry's long-established satisfied customers.

You, too, can enjoy the many advantages and added profit derived from having L. M. Berry and Company handle your Directory Advertising. Call or write today.

CENTRAL TELEPHONE COMPANY
144 SOUTH 12TH STREET
LINCOLN 1, NEBRASKA

July 23, 1957

L. M. Berry and Company
Hulman Building
Dayton 2, Ohio

Gentlemen:

Recently I had occasion to review the operating results of the telephone directory work which your Company does for Central Telephone Company and its associated companies La Crosse Telephone Corporation, Middle States Telephone Company of Illinois, Virginia Telephone & Telegraph Company, Southern Telephone Company, and Southeastern Telephone Company.

As you well know your Company has had directory contracts with these companies for many years. The La Crosse contract dates back to 1919, Middle States 1928, Southeastern 1930, and Virginia and Central 1933.

The directory advertising, under your operations has grown to the point where in 1956 the total volume was in excess of $1,000,000. Our portion of this revenue, under the terms of your contract, is an important factor in our earnings.

What I really started out to say was that we are most pleased with your work and the fine treatment you have afforded us in the operation of the contracts. The truth is, with L. M. Berry and Company we write our own ticket.

I trust our fine relations will continue for a long time to come.

Very truly yours,

L. D. Densmore

L. D. DENSMORE
Vice President &
General Manager

LDD:mac

Since 1910

L. M. BERRY
AND COMPANY

Hulman Building • Dayton 2, Ohio • BAldwin 4-7421

TELEPHONE DIRECTORY ADVERTISING EXCLUSIVELY

Here's a telephone battery that:

lasts at least 40% longer!

requires 80% less current and water!

delivers high output all its life!

C & D's PlastiCal is the most outstanding floating-service battery of the last 50 years. Here's a basically new battery that combines a durable, clear-plastic case with lead-calcium* grids. This new alloy of pure lead and calcium gives grids the strength of those with a large antimony content, but eliminates the harmful effects of antimony.

**A development of Bell Telephone Laboratories*

C & D's PlastiCal has these advantages:

1. ***a 40% longer life*** than any lead-antimonial battery in floating-service. There is no antimony in the PlastiCal to poison negative plates.
2. ***requires 80% less current*** to maintain itself in a fully charged condition. Lower charging rate means plates last longer.
3. ***requires 80% less water.*** Because PlastiCal uses less current, there is less electrolysis of water.
4. ***low maintenance cost.*** PlastiCal can be checked at a glance because the electrolyte level is always visible.
5. ***delivers high output throughout its life.*** Rated capacity remains steady because negative plates do not become contaminated.

C&D

BATTERIES, INC.

of Conshohocken, Pa.

(In the Philadelphia area)

FREE!

For complete information and specifications on PlastiCal—the century's greatest battery development—write for folder T-528.

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

*Koiled Kords RETRACTILE CORDS

Give the Best Service

KOILED KORDS have proved over the years that they give the best service to subscribers and telephone companies alike.

KOILED KORDS have reduced cord maintenance and replacement to an absolute minimum.

KOILED KORDS keep their spring-like shape and last indefinitely under the toughest conditions.

KOILED KORDS are smooth, clean and cannot be harmed by moisture, grease, acid fumes or sunlight. Be sure your subscribers have the best . . . KOILED KORDS

Available from your independent telephone supplier in black and many colors to complement colored telephones.

*Koiled Kords INC., BOX K, NEW HAVEN 14, CONN.

Telephone: CHestnut 8-5515
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KOILED KORDS, THE ORIGINAL RETRACTILE CORDS, ARE THE RESULT OF 17 YEARS OF RESEARCH, DEVELOPMENT AND USE.

*KOILED KORDS IS A TRADE MARK OF KOILED KORDS, INC.

ABOUT THIS ISSUE

ON PAGE 31 our newest author, *Alton H. Steele,* starts the first of what we hope will develop into a series of helpful articles on Traffic Department Supervision. Mr. Steele's first article examines the costs, both direct and indirect, of excessive absenteeism, and presents a program aimed at helping the supervisor maintain a good attendance record for his office. Since the program will help you reduce costs, improve customer service and improve employe morale and respect for management, take our tip and mark the article for careful study.

MOST TELEPHONE men will agree with author *J. B. Spratley's* statement that — "*our customers are ordinarily little concerned with the mechanics of the switching operations, but they are greatly concerned if transmission is not what they think it ought to be . . .*" Using that statement as a base for his remarks, Mr. Spratley has developed an article explaining the many factors involved in the problems of taking care of transmission and keeping costs down. The article, titled "Transmission — Is Our Principal Product," starts on page 34.

ON PAGE 39 you will find the start of Chapter X-B of TE&M's training course on "Modern Cable Construction." In this installment our Technical Editor, John S. Reed, discusses characteristics of Copperweld messenger strand, and methods of measuring tension in cable messenger.

ERNEST W. FAIR has some good ideas on employe selection and he has put them together into an article titled "How To Select The Best Man For The Job." His check list of time proven and tested selection factors provides a workable guide for selecting supervisors and department heads. The article starts on page 57 and it is packed with ideas you can put to work.

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Telephone Engineer

AND MANAGEMENT

THE TELEPHONE INDUSTRY MAGAZINE
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FRONT COVER

Officers and members of Board of Directors of Oklahoma Telephone Association. Seated (l. to r.): D. R. MAJORS, Carmen, director; JOE TROWER, Mannford, newly elected first vice-president; F. E. MESSECAR, Broken Arrow, director; JACK HOLT, Stilwell, director. Standing (l. to r.): HARROLD PETERSON, Roosevelt, director; S. C. RICH, Oklahoma City, treasurer; LEROY GUEST, Davenport, newly elected second-vice-president; F. F. WRIGHT, Kingfisher, newly elected president; A. L. McFADDEN, Ringwood, retiring president; W. E. GOSDIN, Oklahoma City, director; HUGH D. STRAUGHN, Oklahoma City, secretary; and R. E. HARRIS, Purcell, director.

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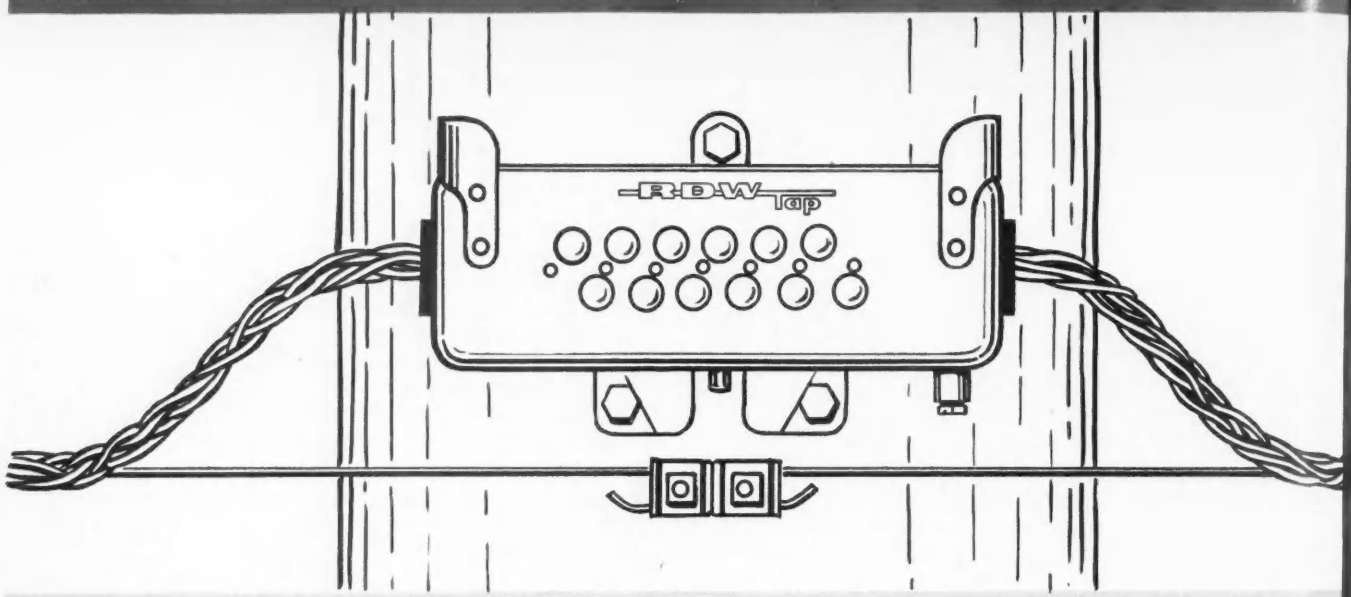
FOR THE FIRST TIME

A SIMPLE RDW* Tap



NO CUTTING
NO SPLICING
NO TAPING
NO ADDED IMPEDANCE

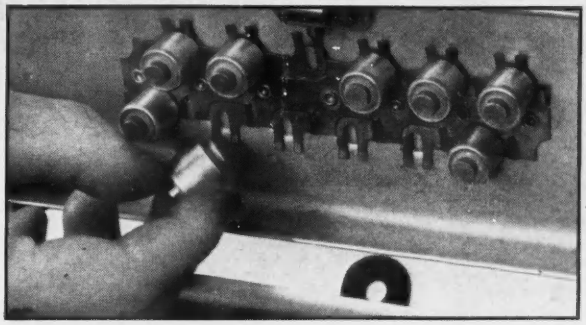
Just a logical and economical method of connecting subscriber drops to the rural distribution wire running straight through the RDW TAP. Installation of the unit has been greatly simplified by the following:

1. Mount the RDW TAP with the lag screw bracket to the pole without gaining.
2. Provide adequate RDW line slack.
3. Cut out the excess RDW messenger line slack.
4. Anchor cut ends of RDW messenger wire to pole below the RDW TAP.
5. Separate selected pairs and connect to face plate studs without cutting or splicing.
6. Insert drops and connect to designated studs.

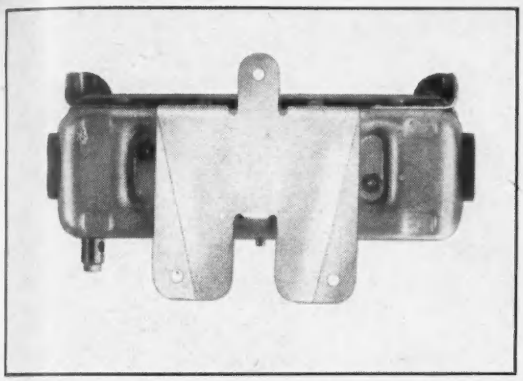
The RDW TAP provides a low-cost maintenance test point, and additional drops can be installed without opening splices or installing additional equipment. Sizes range in 6, 11 and 16 pair capacities.

Protection is optional but can be added later on a pair by pair basis with Cook Minigap or Mytigap arresters.

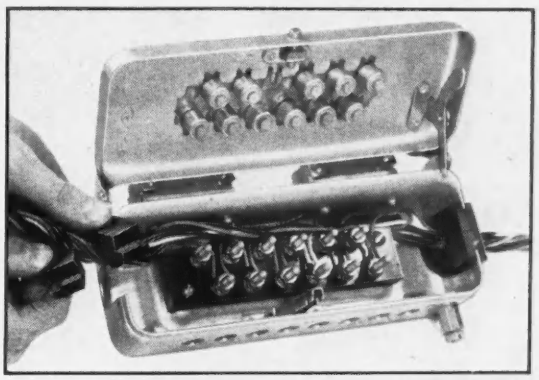
*Rural Distribution Wire



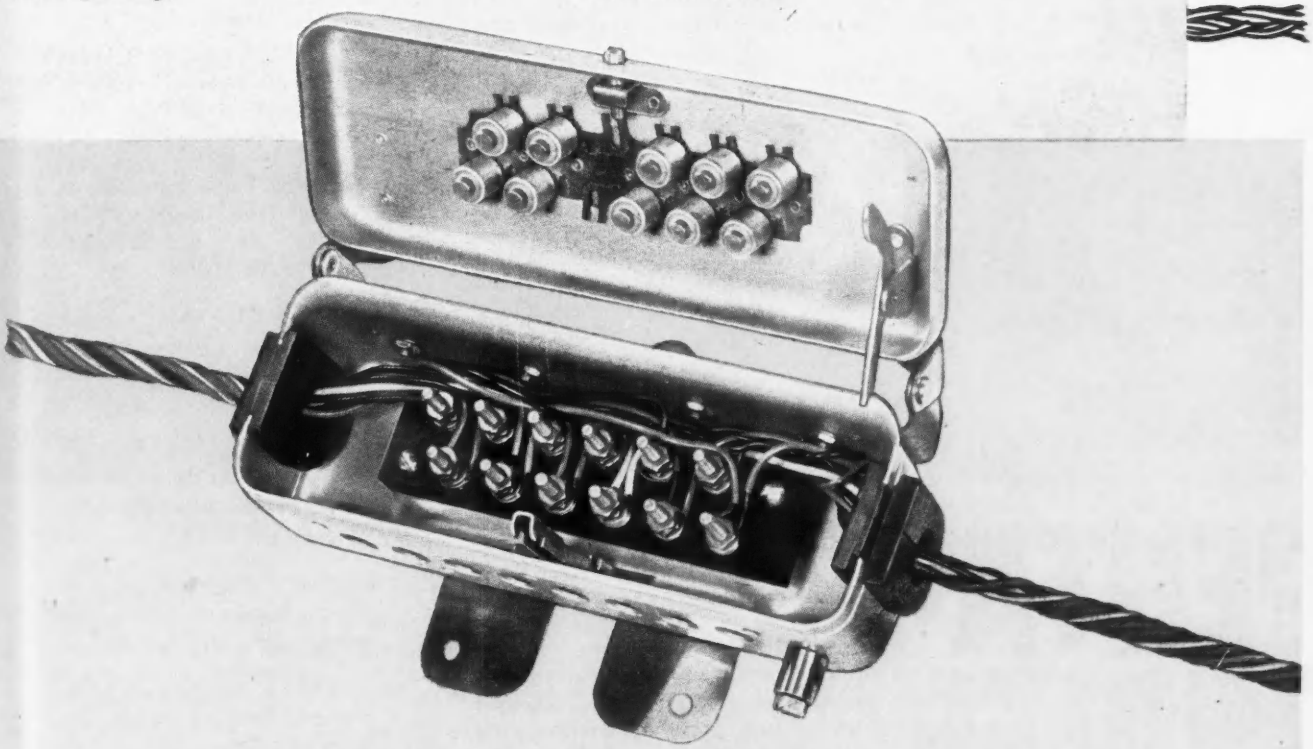
RDW TAP contains the salient features of the Cook Stranterm.



Bracket for mounting direct to the pole without gaining.



Split grommets provide straight through wire installation.

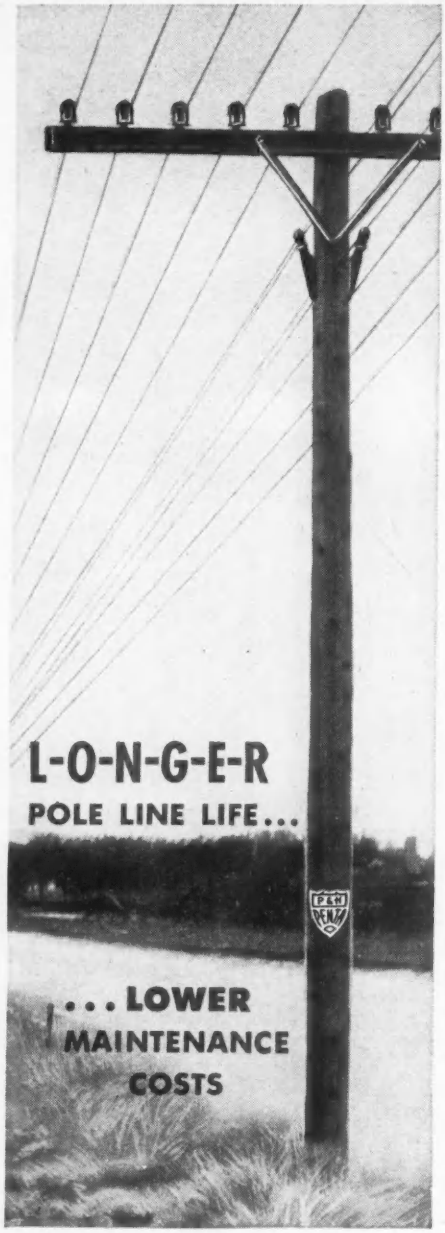


Optional pair protection, accessible studs and room to sort selected pairs is provided by this compact assembly.

COOK ELECTRIC Company

Since 1897

COOK ELECTRIC COMPANY CHICAGO 14, ILLINOIS



SPECIFY
NORTHERN
WHITE CEDAR

PENTA POLES

Clean from Butt to Tip

Write for complete information
PAGE & HILL, Inc.
Minneapolis 3, Minn.

COMING CONVENTIONS

LOUISIANA Telephone Association, Jung Hotel, New Orleans, Feb. 12-13, 1958.

MINNESOTA Telephone Association, St. Paul Hotel, St. Paul, Feb. 17-19, 1958.

TEXAS Telephone Association, Baker Hotel, Dallas, March 3-4, 1958.

KENTUCKY Telephone Association, Phoenix Hotel, Lexington, March 4, 1958.

IOWA Independent Telephone Association, Hotel Fort Des Moines, Des Moines, April 8-9, 1958.

OHIO Independent Telephone Association, Deshler Hilton Hotel, Columbus, April 14-16, 1958.

NEBRASKA Telephone Association, Paxton Hotel, Omaha, April 22-23, 1958.

INDIANA Telephone Association, Claypool Hotel, Indianapolis, May 7-8, 1958.

WISCONSIN State Telephone Association, Plankinton House Hotel, Milwaukee. May 14-15, 1958.

ILLINOIS Telephone Association, Hotel Pere Marquette, Peoria, May 21-22, 1958.

MISSOURI-KANSAS Telephone Associations, Town House, Kansas City, Kans., May 26-27, 1958.

PENNSYLVANIA Independent Telephone Association, Bedford Springs Hotel, Bedford, May 26-28, 1958.

MAINE, NEW HAMPSHIRE, VERMONT Telephone Associations, Somerset Hotel, Rockland, Maine, June 3-5, 1958.

CALIFORNIA Independent Telephone Association, Sheraton-Palace Hotel, San Francisco, June 4, 5, 6, 1958.

NEW YORK Telephone Association, Scaroon Manor, Schroon Lake, June 16-18, 1958.

MICHIGAN Independent Telephone Association, Pantlind Hotel, Grand Rapids, Sept. 9, 10, 11, 1958.

ARKANSAS Telephone Association, Hot Springs, (Hotel To Be Announced), Sept. 15-16, 1958.

ROCKY MOUNTAIN Telephone Association, Hotel Utah, Salt Lake City, Utah, Sept. 17-19, 1958.

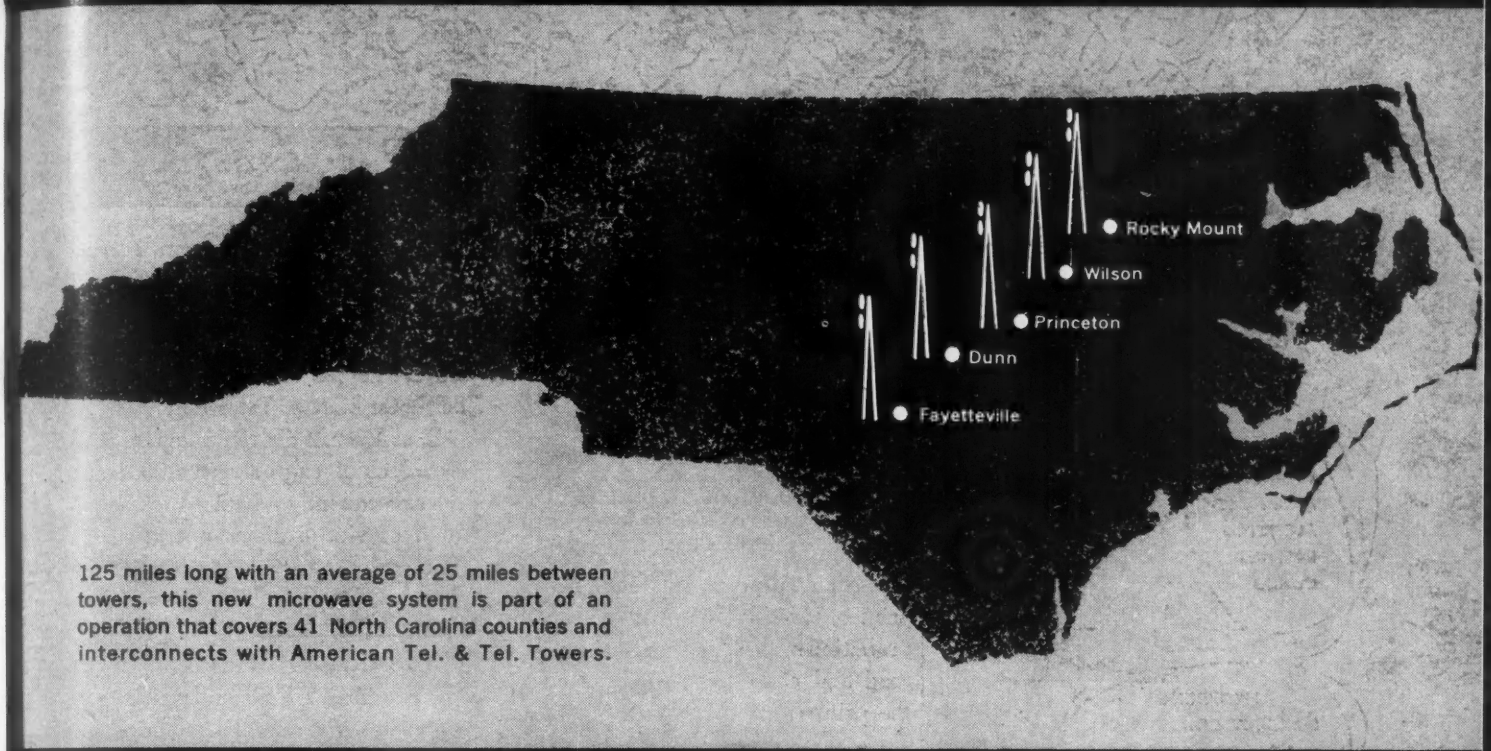
UNITED STATES Independent Telephone Assn., Conrad Hilton Hotel, Chicago, Oct. 13, 14, 15, 1958.

VIRGINIA Telephone Association, Roanoke Hotel, Roanoke, Oct. 30-31, 1958.

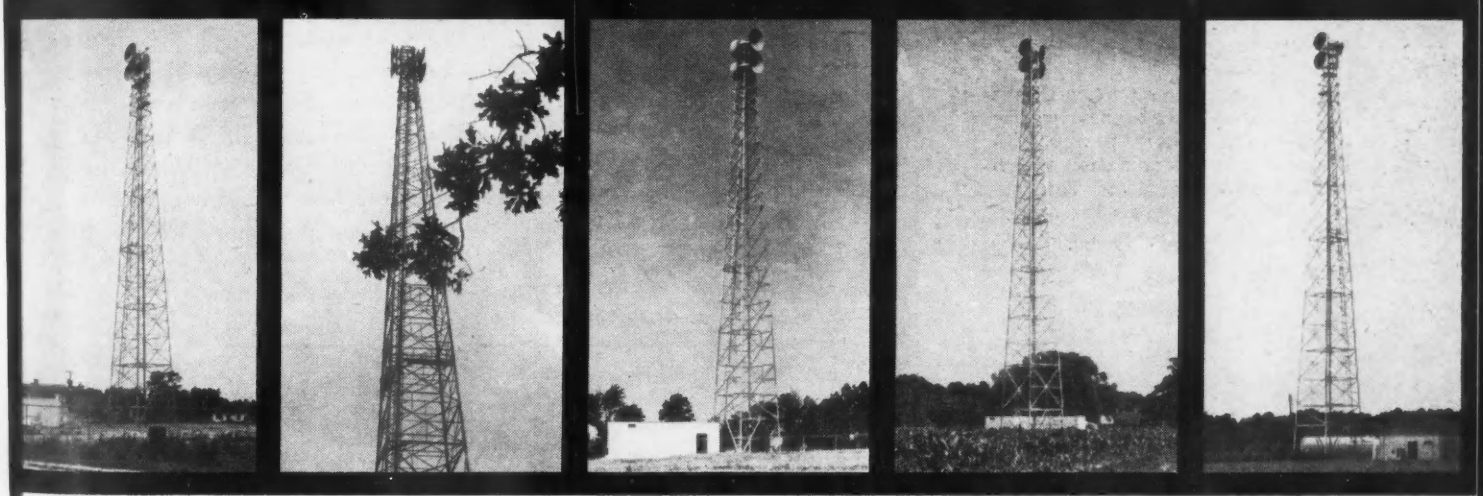
OKLAHOMA Telephone Association, Huckins Hotel, Oklahoma City, Nov. 5-6, 1958.

ALASKA Telephone Association, Baranof Hotel, Juneau, Alaska, Nov. 12-13, 1958.

Progressive telephone company expands microwave service with five more Blaw-Knox towers



125 miles long with an average of 25 miles between towers, this new microwave system is part of an operation that covers 41 North Carolina counties and interconnects with American Tel. & Tel. Towers.



Erected by the Radio Construction Company of Pittsburgh, these Blaw-Knox Microwave Towers range from 150 to 250 feet high, and are built to handle additional antennas as service is extended.

Carolina Telephone and Telegraph Company have just installed their second microwave system since 1954. The new five tower section simplifies future expansion and permits the addition of hundreds of circuits at diminishing circuit cost.

Constantly extending and improving customer service, this company has nearly tripled its services in ten years to now serve nearly 150,000 telephones.

Today, as in 1954, Blaw-Knox Microwave Towers provide the dependable structures needed in an area where hurricanes have occurred in recent years. Located in a section where wind velocities have reached 100 miles per hour, Blaw-Knox Towers help maintain continuous service necessary for good customer relations.

A microwave system may be the cost cutting answer to your own expansion plans. For details on Blaw-Knox tower engineering, design, fabrication and erection services, write for Microwave Tower Booklet 2538.

BLAW-KNOX

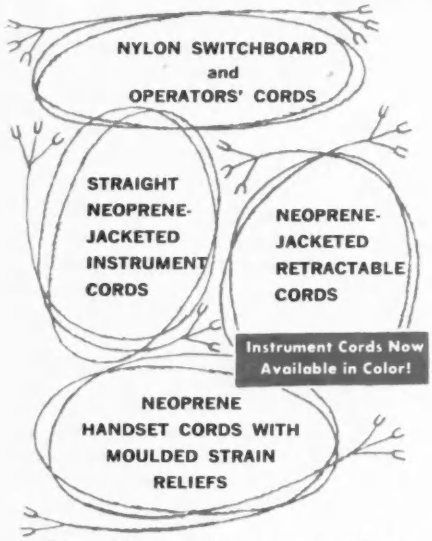
BLAW-KNOX COMPANY

Blaw-Knox Equipment Division
Pittsburgh 38, Pennsylvania

MICROWAVE TOWERS

Blaw-Knox builds guyed and self-supporting towers for Microwave, AM, FM, TV, Radar, Communications . . . Transmission Towers . . . Parabolic Antennas . . . Special Structures. All custom built to meet your requirements.

NEED CORDS IN A HURRY?


NYLON SWITCHBOARD and OPERATORS' CORDS
STRAIGHT NEOPRENE-JACKETED INSTRUMENT CORDS
NEOPRENE-JACKETED RETRACTABLE CORDS
Instrument Cords Now Available in Color!
NEOPRENE HANDSET CORDS WITH MOULDED STRAIN RELIEFS

We pride ourselves on *two* things . . . making only the highest quality cords—and, making prompt deliveries . . . a combination which spells complete *customer satisfaction!* Why not give us the opportunity to prove these points to you.

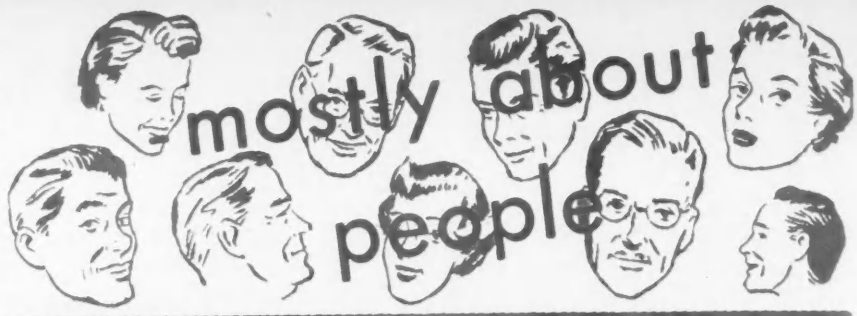
A phone call, wire or letter will bring you a catalog, samples and prices.

COMMERCIAL CORD AND SUPPLY CO., INC.

CLIFTON SPRINGS, N. Y.

Phone: HOward 2-5111

QUALITY CORDS FOR ALL MAKES AND TYPES OF TELEPHONE INSTRUMENTS



ACROSS THE EDITOR'S DESK

"Gremlins At Work"

NOTICE OUR boo-boo in the December 1 issue in this column? We had *Donald C. Power* listed as "*recent*" president of General Telephone Corporation when we had written it as recent president of USITA. Linotype "Gremlins," printers call it. Don Power is the now president of General Telephone and will be for some time! And our present printer is still our printer, but on probation! The page had been proof read and corrected but neglected by the printer.

Mrs. Emma Allen Dies

MRS. EMMA G. ALLEN, widow of the late John S. Allen and mother of Harris G. Allen of Wisconsin died at a Delafield, Wis. hospital during December. She was an officer of the Milton & Milton Junction, Boscobel and North-West Telephone Companies. Funeral services were in Madison on December 18.

L. Gray Beck

LAST MONTH, *L. Gray Beck*, vice-president of the West Coast Telephone Co., Everett, Wash., was named to succeed Ray Dalton as v. p. and gen. mgr., according to an announcement by C. H. Loveland, president of the company. Beck assumed his new duties coincident with Dalton's announced retirement on January 1, 1958.

Beck's rise to this position comes after some 23 years of service with the West Coast Telephone Co., interrupted by a distinguished military career during World War II. In 1940, he left the company to join the U. S. Signal Corps and served with distinction in Africa, Italy, North Ireland and England.

He was discharged from service with the rank of Lieutenant-Colonel after having received honors including an Order of the British Empire and the Legion of Merit. He rejoined the West Coast Telephone Co. in 1947 as Everett district manager, was named chief engineer in 1953, and was subsequently advanced to the position of vice-president-operations in 1956.

Gordon C. Hoit

GORDON G. HOIT, executive vice president of Stromberg-Carlson, a division of General Dynamics, has just been made a member of the board of trustees of the Rochester Chamber of Commerce. This added to his duties in the Controllers Institute of America, American Management Association, National Association of Cost Accountants, Junior Achievement Program, Rochester Rehabilitation Center, YMCA, Rochester Civic Music Association, the Memorial Art Gallery and the Rochester Museum Association might keep him busy for a few minutes of each day. We think Gordon is doing his share in the community, right?

New York Statistics

IN HIS December 26 Bulletin our old friend *Ham Cunningham*, executive secretary of the New York State Telephone Association, announced the new statistical booklet "Operating Statistics of Independent Telephone Companies in New York State — Year Ending December 31, 1956" had been put in the mails. Not only is the title a long one but the work of amassing the information contained therein an even longer one.

A limited number of copies of the booklet at the Albany, N. Y. office are available at $1.50.

SUPERIOR CABLES

Better communication cables . . . completely insulated and sheathed in modern plastics!

TEL-C

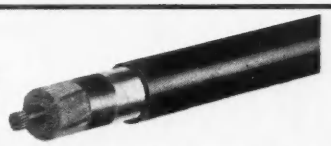
For all aerial and duct use. Meets REA Spec. PE 14. 6 to 909 prs. 24 and 22 ga. 6 to 404 pr. 19 ga. Quadded or composite.

TEL-CA

For aerial, duct or direct burial installation. Extra mechanical protection. 11 to 202 prs., 24, 22 and 19 ga. Quadded or composite.

TOLL

Available in pairs, quads and in composite with regular exchange area cables. Meets rigid electrical requirements needed for toll service. Conductors meet ASTM B-3.



RDC

For extension of service in rural areas where long runs are required. Color-coded. High strength steel support wire. 1-16 prs.

UDC

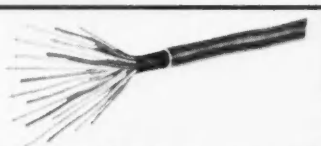
For short run installation where demand for service is high, low-cost construction is required. Self-supporting. Color-coded. 6 or 16 pr. 24 ga.

COMPOSITE

Complements of different gauges provided under one sheath to meet engineering requirements. Same high standards maintained.

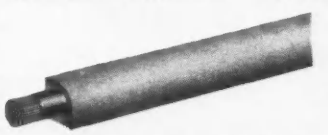
INTERCOM

Inside wiring cable, multiple conductor paired. Fully color-coded for intercommunication, inside telephone, sound systems. Special vinyl jacket.



QRC

Quarter-round shaped jacket in choice six std. colors. For use in offices, hotels, etc., for intercommunicating and sound-systems. Up to 51 prs. Features neat, quick, easy installation.



INSIDE TELEPHONE WIRES & CABLES

For inside buildings to extend circuits from outside terminating devices to station sets. Jacketed inside-outside wire. Duct wire (twisted). Flat web type. Jumper wire. Distributing frame wire. Ground wire.

PLW .083S

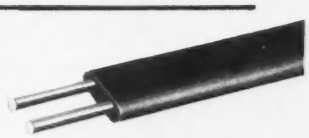
.083 inch galvanized special steel wire conductors. Insulated in parallel with high molecular weight polyethylene. Self-supporting.

PLW 214 CW

14 gauge solid copperweld conductors. Same insulation as PLW .083S to meet very rigid electrical standards. Self-supporting.

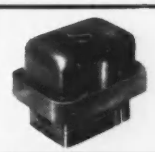
PLW 212 CW

12 gauge solid copperweld conductors. Same insulation as PLW 214CW. Self-supporting. All PLW types for long drop runs at minimum cost.



PLWT 1 - PLWT 2

Terminal is self-supporting on line wire. Simplifies drop-line connections. Provides continuous positive contact. Use with Superior PLW.

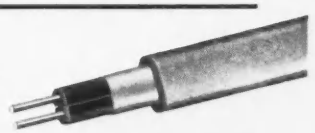


DB 217S

Direct burial wire, spiraled flat steel strip shield for maximum resistance to damage from road or farm machinery and equipment.

DB 217B

Direct burial wire, longitudinal bronze shield to resist damage from insects and rodents. Also use in areas conducive to lightning activity.

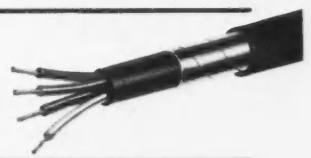


DB 217

Non-armored type wire for uses in areas where conditions are normal. All DB wire available with 17 or 16 ga. conductors.

"B" SERVICE WIRE

For direct burial use. Resists physical damage. Excellent protection against lightning. 2 pr. 20 ga. copperweld conductors. 40% conductivity. Color-coded.



"SUPER-SPLICE"®

Splice sleeve with one end sealed. Filled with insulating and waterproofing material. Use to keep splices waterproof. REA standard.

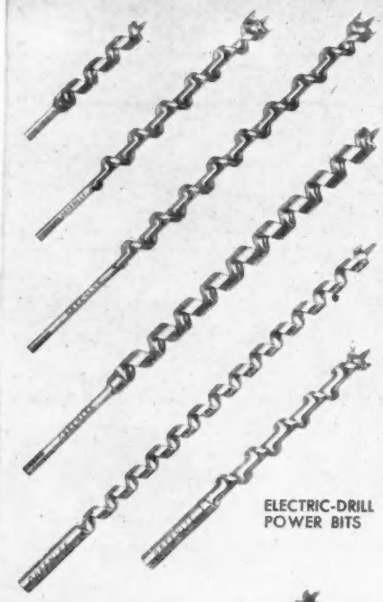
INDEPENDENT

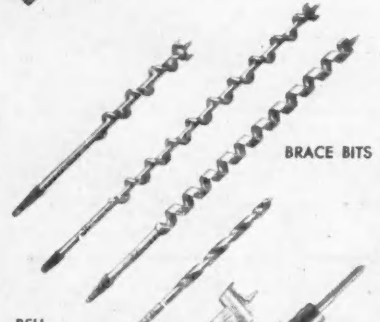
For detailed specifications, write

SUPERIOR CABLE

SUPERIOR CABLE CORPORATION • Hickory, North Carolina

high-quality, long-lived
BORING TOOLS
for pole, crossarm, and timber work . . .





TOOLS FOR CRAFTSMEN
GREENLEE

Whether you need to bore deep or shallow holes, small or large, there is a GREENLEE bit, drill, or auger for the job! Various lengths and styles for electric drill or hand-brace use. All of highest quality materials and correct design for easy boring, clean cutting, and long life under hard usage. Stocked by leading telephone supply distributors . . . see yours or write direct for literature.

Greenlee Tool Co., 2001 Columbia Ave., Rockford, Ill.

REVENUE BOOSTERS

Does Color Help Sell Extensions?

EVIDENCE that color helps sale of additional telephones was obtained by Pacific Tel. & Tel. Co., in recent study. One out of five customers who had color telephones said they would not have ordered their second telephone if black had been only color available. Survey covered 289 customers who had recently bought additional telephones in color in San Francisco extended area exchanges. Newspaper and magazine ads were principal stimuli recalled by purchasers (44 percent). Television and radio were mentioned by 22 percent. "Snowball" effect of seeing color in homes of friends or relatives also appears to be factor. One in three persons said they first saw or heard about color from friends or relatives.

Overseas Calling Rate Up

SINCE undersea cable to Hawaii was placed in service on Oct. 9, 1957, number of overseas messages between U. S. and Hawaii has increased steadily. For five days prior to opening of cable average number of messages per business day was 589. In period between Nov. 1 and Nov. 13 average number of messages per business day was 758, a 29 percent increase.

Overseas messages between U. S., Canada and European countries served by trans-atlantic cable continue at same high level reached shortly after cable was placed in service. In 10 days preceding opening of cable, calls to United Kingdom averaged 336 per day. From Nov. 1 to Nov. 13, 1957, they averaged 694, a 107 per cent increase. Messages to all countries accessible by cable averaged 1,091 in 10 days preceding opening of cable. In same Nov. 1 to Nov. 13 period they averaged 1627 per day, a 49 percent increase.

Centralized Ringer

TO DETERMINE customer reaction to the present arrangement in which a bell is provided for each telephone set in the home, as contrasted to the idea of a single centrally-located bell, about 150 trial models of a "centralized" ringer are being tested in Atlanta, Georgia.

The centralized ringer has the general appearance of a small door chime. It is intended for wall mounting at a central location in the home, slightly above the door height. By means of a pull chain, the customer may select either a loud bell sound or a much softer "ding-dong" chime signal. A tell-tale indicates to the customer the condition selected. The loud bell is of sufficient intensity to be heard outside — on the terrace or in the patio. The ding-dong signal, of lower intensity, is intended for use when the customer is in the house.

If this approach proves acceptable, telephone sets of the future can be made smaller because of the space saved by the elimination of the present ringer. Where some ringing signal is needed in addition to the centralized ringer, it would be feasible to use a small auxiliary ringer, about the size of a king-size cigarette pack, which has been developed as a possible replacement for the large ringer arrangement now being used.

"Yes–but will they write on paper?"

by John Voss

Remember when ball point pens were all the rage?

It seemed for a while that folks hardly talked about anything else. Of course, the novelty wore off pretty fast, and now the ball point pen is a standard piece of merchandise.

I recall, though, how we were told that they'd write under water, on all kinds of odd surfaces. We used to joke about these pens and wonder if they would *write on paper, under normal conditions.*

Well, you can think of similar promotions. And, of course, you all know how many products are advertised through testimonials by movie stars and other famous personalities.

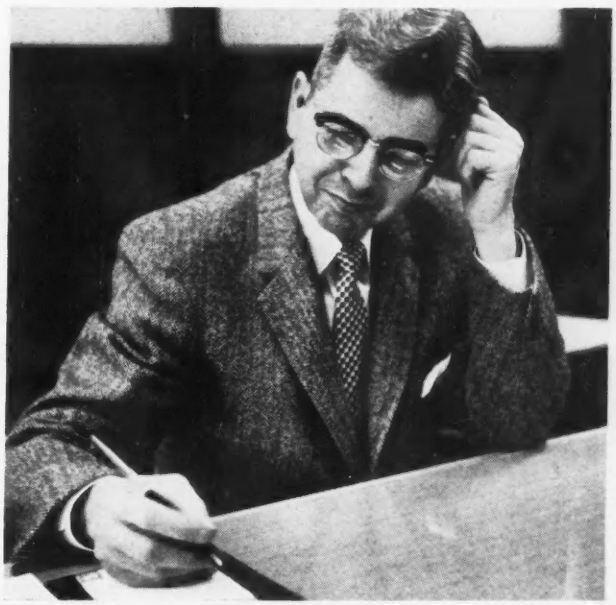
At Stromberg-Carlson we firmly believe in case histories and testimonials — but we make a point of sticking close to "home." When we give you examples of our products at work, we offer typical situations — *the kind you meet in your operation every day.* When we publish a testimonial, it comes from somebody in an *independent operating company like your own.*

For example, here's a statement from the President of a company in the Pacific Northwest that installed our XY® Toll Ticketing equipment:

"The effect is a saving of two full-time shifts of operators, and at the same time an increased toll volume of around 25%, and highly pleased subscribers.

"Early next year we will expand our direct distance dialing areas to cover six additional exchanges. This should effect further savings in operating costs, and some additional toll stimulation."

Another case history in our files concerns an operating company in South Dakota that sold one of our F-40 PBX's to a local grain, feed and chemical firm. The exchange manager told us, "Our customer is delighted with the efficient dial service provided by this compact PBX." And the subscriber found the equipment "a joy to operate." In the words of the receptionist-operator, "I'm amazed at the extra time it allows me for my other duties. Takes up so little space, too."



We get other gratifying customer reports on our XY equipment. People tell us how maintenance-free it is . . . how much space it saves . . . how easy it is to expand.

Well, I could go on and on. But here's the important point as far as you're concerned: all our case histories and testimonials are *direct, positive proof* of the economy and operating efficiency of the XY equipment we make and sell.

With all due respect to pens that write under water and to the endorsements of movie stars — we at Stromberg-Carlson are concerned only with how our products perform when they work for *you* — under the operating conditions of *your business.*

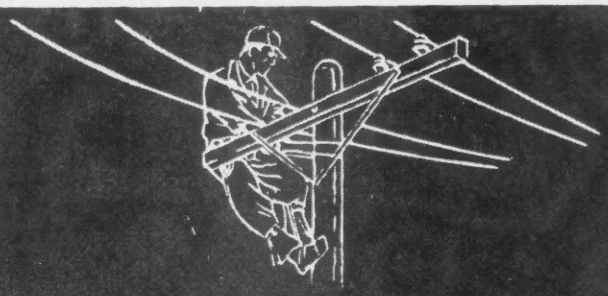
There's XY equipment in operation in practically every one of the 48 states. Pretty solid testimonial, if you ask me.

John H Voss

Vice President and General Manager
Telecommunication Division
STROMBERG-CARLSON, A Division of General Dynamics Corp., Rochester 3, N. Y.

Advertisement

INDUSTRY NEWSLETTER



Pentecost Heads New NARUC Committee Matt L. McWhorter on Executive Group

CAYCE L. PENTECOST, of Tennessee Public Service Commission, has been appointed chairman of special committee National Association of Railroad & Utilities Commissioners set up to work for repeal of transportation and communications excise taxes. Other members of excise tax group, appointed by NARUC Pres. Edward R. Thornton and approved by Executive Committee, are George A. McLaughlin, R. I.; Jesse W. Dillon, Va.; Myron R. Renick, W. Va.; Ben T. Wiggins, Ga.; Joseph Sharfsin, Pa.; and Francis Pearson, Wash.

New members of NARUC Executive Committee are Matt L. McWhorter of Georgia and Chairman Edward N. Gadsby of Securities & Exchange Commission. Hammond Fowler of Tennessee will head Committee on Progress in Regulation of Public Utilities.

Another new NARUC group is subcommittee of staff members appointed to work with special committee on procurement and training of commission engineering personnel. Group consists of Robert B. Alford, Ga., chairman; Ralph E. Purucker, Wis.; Harold L. Gerrish, Me.; Edward C. O'Rear, Ky.; R. B. Thomas, Ill.; Alton G. Marshall, N. Y.; Joseph M. McNulty, Colo.; C. W. Mors, Cal.; Hugh H. Hunter, Md.; Thomas N. Hunt, Wash. and R. E. Duffy, Mo.

More Phones In 1958: Industry Plans Big Outlays

GROWTH and construction of Bell System in 1958 will be very large, although somewhat below 1957, Frederick R. Kappel, president of American Tel. & Tel. Co., said in a year-end statement. Reporting the long term outlook is that telephone services must be widely expanded to meet all the needs of our fast growing country, Kappel said, "Under these circumstances we foresee the need for continuing heavy construction which will require new capital in the range of $1 billion to $1.5 billion a year . . ." Bell Companies in 1957 expended some $2.5 million for construction . . . Capital spending of Illinois Bell Tel. Co., in 1958 will continue at about the $150 million pace maintained in 1957, W. V. Kahler, president, told stockholders last month. In the final quarter of '57 he said, new telephone plant construction totalled about $40 million.

Bell System Publishes Book On Depreciation

BELL SYSTEM has published book titled "*Depreciation — History and Concepts in the Bell System.*" J. R. Marden, primary writer of the book, is general inventory and costs engineer of Pacific Tel. & Tel. Co. He has charge of depreciation study work for that company. Publication is intended primarily to meet need for text to preserve history of evolution of Bell System depreciation practices. However, it contains information of interest to persons in both branches of industry who have responsibility for dealing with this vitally important subject. Copies are available through Graybar Electric Co. at about $4 a copy.

CWA Says Pay Raises In Bell System Bargaining Total $63,600,000

IN A REPORT on 1957 bargaining in Bell System, Communications Workers of America said some 360,000 employes represented by union got basic pay boosts averaging 8.5 cents an hour, which added up to $63,600,000 in wage increases on annual basis, under terms of contracts signed during 1957. In Western Electric Co. & plant departments of operating companies, hourly wage boosts, CWA said, averaged 10 and 11 cents. In traffic departments, increases ranged from 7 to 7.5 cents; for clerical workers average was about 8 cents.

Work Stoppages In '57 Below 1956 Total

STRIKES idled fewer workers in 1957 than in any year since World War II, Bureau of Labor Statistics reported last month. Only 1,400,000 workers were involved in strikes, the agency said, compared with 1,900,000 in 1956 and 4,600,000 in 1946 when a rash of strikes broke out after the war. Workers lost 16 million man-days of time as result of strikes in 1957, less than half of the 33.1 million man-days lost in 1956.

Please turn to page 14

The call is for color

Brightest spots in today's modern offices . . . telephones in refreshing decorator colors! These attractive phones keep pace with the new trend in interiors . . . make telephoning more pleasant than ever! America's 4,400 Independent telephone companies provide up-to-date service like this throughout *two-thirds of the entire nation.* Modern, dependable communications for business and home . . . the finest in the world.

INDEPENDENT TELEPHONE COMPANIES

helping you reach all America

U. S. Independent Telephone Association
Pennsylvania Building, Washington, D.C

Figure for the big strike year of 1946 was 116 million. The 4-day strike of A.F.L.-C.I.O. Communications Workers Union in Sept. 1957, although one of shortest of major stoppages, affected 125,000 workers — the most idled by any new 1957 strike, the agency's report said.

West Coast Tel. Co., Plans Stock Issue

WEST COAST Tel. Co., Everett, Wash., plans to sell publicly 160,000 shares of junior cumulative preferred stock, $1.44 dividend convertible series. Proceeds will be used to repay bank loans of about $900,000 incurred for construction and to finance new construction.

Ohio Consolidated Asks $3,000,000 In Suit On Strike Damages

OHIO CONSOLIDATED TEL. CO. has filed suit for three million dollars' damages against Communication Workers of America Union in Washington C. H., Portsmouth, Cambridge and Wilmington. Suit is aftermath of strike which began on July 15, 1956 and continued for months.

Telephone company charged union with conspiring to damage and destroy properties and accused union of promoting "program of wanton, wilful and malicious misconduct and property damage." Union also was accused of forcing telephone exchanges to be closed in Portsmouth, New Boston, Sciotoville, West Portsmouth and Lucasville in Scioto County; Cadiz in Harrison County, and Smithfield, Adena and Dillonville, Mt. Pleasant, Tiltonville and Brilliant in Jefferson County. Suit was filed in Clinton Common Pleas Court.

THOUSANDS IN USE...

tightening guys and doing hundreds of lifting, pulling and binding jobs safely and efficiently

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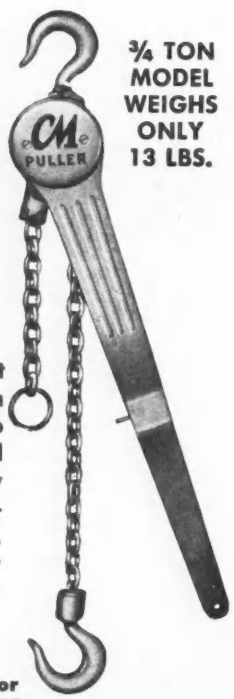

¾ TON MODEL WEIGHS ONLY 13 LBS.

● Operated by a rachet handle requiring no more effort than an automobile jack. Objects up to 12,000 lbs. can be lifted or pulled . . . vertically, horizontally or at any angle. Anyone can operate. Automatic brake holds loads at any point. Inexpensive. Sturdy. Safe. CM-Alloy flexible welded load chain.

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AT&T Long Lines Reports Christmas Traffic Low

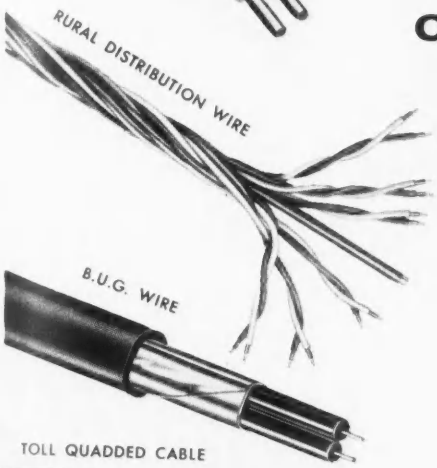
CHRISTMAS traffic was heavy in 1957 but rate of gain was considerably less than has been experienced in past. At offices operated by A. T. & T.'s Long Lines Dept., message volumes were only 1 per cent over Christmas of 1956. Statistics for country as a whole are not yet available, but for last several weeks of '57 rate of increase in traffic over same periods of last year had shown a steady decline. For Oct. 1957, increase over corresponding period in 1956, was 13 percent over same month in 1955. Nov. volumes were up only 4 percent, over 1956 as compared with 10 percent increase in 1956 over 1955.

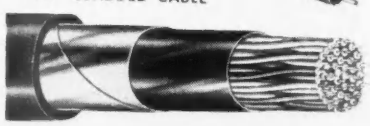
On Christmas, answering service was generally satisfactory. Congestion occurred in some cases but majority of calls were handled without difficulty as would be expected with 3,600 more circuits in 1957 layout than in 1956. Overseas traffic was considerably heavier than 1956 — up nearly 13 percent. Traffic with Hawaii reflecting recent opening of deep-sea cable system between that point and mainland, totaled more than 2,700 messages on Christmas Day. This was 134 percent above 1956.

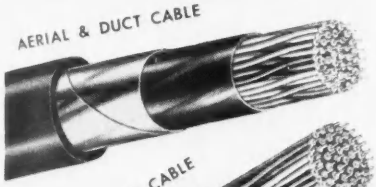
Industry Highlights

FLORIDA became 1st state in nine-state area of Southern Bell Tel. & Tel. Co. to have 1,000,000 Bell telephones, with installation of 1,000,000th telephone at Airtronics International Corp. in Hialeah. Florida Railroad & Public Utilities Commission Chairman Alan S. Boyd, who made 1st call over the milestone telephone, forecast that within 10 years, Southern Bell will have 2,500,000 telephones in Florida. . . . F. J. Buskens, upstate div. commercial mgr. of Illinois Bell Tel. Co., has been named gen. commercial mgr. of Illinois Bell's State Area. He succeeds C. W. Ebersold, who has been appointed assistant V. P. — public relations of American Tel. & Tel. Co. William M. Martin, state area general sales mgr., has succeeded Buskens as upstate divn. commercial manager.

Keith S. McHugh, pres. of New York Tel. Co., was married Dec. 14, in New York to Mrs. Dorothy Barbee Miller, widow of Harry Miller, former assistant president of Los Angeles *Times*. McHugh's 1st wife, Mrs. Frances Brown McHugh, died several years ago. . . . Myron C. Taylor resigned Dec. 18, as member of board of directors of American Tel. & Tel. Co. to conclude board service of 28 years, longest of any member of present board and one of longest periods of service in history of company.







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Always at his fingertips . . .

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QUALITY and SERVICE!

Providing the right cable for the right job can be a new problem in every independent telephone installation. That's why so many independent companies depend on Ansonia's engineering staff whenever wire or cable is involved.

Ankoseal cables are sold to independent telephone companies through authorized Telephone Supply Distributors only.

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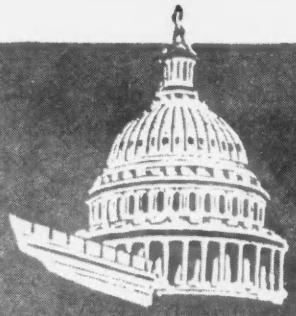
543-7

WASHINGTON NEWSLETTER



Washington Outlook

ANOTHER year of many investigations and relatively little legislation affecting the communications industry appears in the cards with the return of Congress for another session. Most of the investigations and committee hearings, of course, will be in the areas of national defense, missiles, our endeavors to penetrate outer space, and similar subjects which do not bear directly on the communications field. Congressional probes into activities of the federal regulatory agencies and on antitrust consent decrees will bear more directly on the industry, but are unlikely to produce any concrete legislation which would affect communications regulation.

Prospects for tax reduction almost certainly went out of this world along with the Soviet sputniks, but the general subject of taxes is bound to receive Congressional attention.

One legislative subject which probably will produce concrete results of some kind, however, is the minimum wage law, with strong likelihood of a revision of the Fair Labor Standards Act passing Congress during the current election year.

Antitrust Subcommittee

AT THE OUTSET of the Congressional session, Washington observers were watching the House Judiciary antitrust subcommittee closely, awaiting an announcement by Chairman Emanuel Celler of the Judiciary group about its next series of hearings investigating an antitrust consent decree. It is generally assumed that the subcommittee will take up the consent decree reached by the Bell System and Justice Department in January, 1956, as an early subject for hearings.

There is little prospect of any legislation coming out of the antitrust hearings, it is felt, but the sessions will produce a sounding board for members of the committee and, in all probability, competitors of the Bell System who will wish to express their views about operations of the System and the implications of the consent decree.

The decree has been a focal point in the controversy surrounding the Bell System companies' tariffs providing for the lease and maintenance of private mobile radiotelephone systems, reported in detail in this space over the past year.

Wiretapping

THE JUDICIARY Committee also has on its docket a wiretapping bill approved by another subcommittee — also headed by Rep. Celler, without whom nothing much goes on in the committee — which is now likely to receive considerable attention, as a result of the Supreme Court decision outlawing wiretapping evidence in federal courts even when obtained under state laws.

A subcommittee-approved bill would permit wiretapping by law enforcement officials, provided they have obtained a court order, in national security cases. Several Congressmen have urged that Congress pass a law to permit the Federal Bureau of Investigation and similar organizations to use wiretapping in investigations, and Attorney General William P. Rogers has commented that he expects Congress to pass a wiretapping law this year, to "clarify" the situation.

Minimum Wage

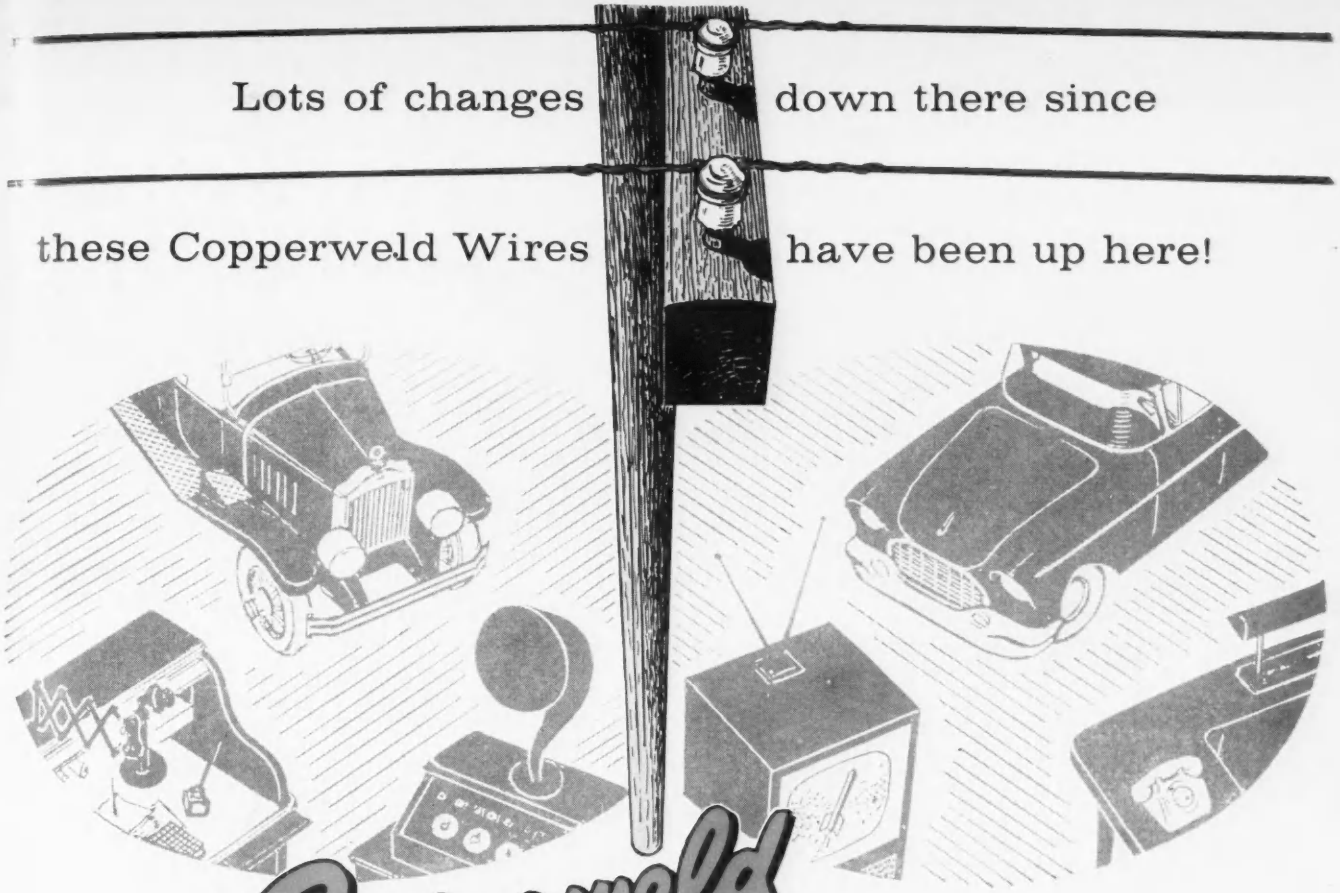
THE SENATE and House Labor Committees have been holding regional hearings on minimum wage and related topics, and there seems to be a very strong possibility of new legislation in this years' Congress. This, of course, inevitably means a strong push toward repeal of the present 750-station exemption for switchboard operators, particularly in view of the increasing number of dial conversions in small exchanges.

There seems little doubt that the exemption will one day be removed, but there appears to be a good chance that the removal can be delayed for a while longer, either through retention of the present exemption through one more minimum wage law revision, or through establishment of a time limit in the new law, at the end of which the exemption would no longer apply.

Please turn to page 22

Lots of changes down there since

these Copperweld Wires have been up here!



Copperweld LINE WIRE

gives long-life performance

Years pass . . . products come and go . . . but the qualities of Copperweld* Line Wire make it as modern today as the day it was installed.

For more than 40 years Copperweld Line Wire has continued to provide excellent talking qualities because of its long-life, non-rusting copper covering. It has also provided the permanence and rugged strength to resist the most adverse weather conditions because of its protected steel core.

Copperweld's record is unmatched for past performance. But the story doesn't end there—it is designed to provide outstanding performance in the future. Copperweld Line Wire is the only long-span conductor suitable for voice, signal, and carrier circuits. Write us today for complete engineering data.

*Trade Mark

COPPERWELD STEEL COMPANY

WIRE AND CABLE DIVISION *Glassport, Pa.*

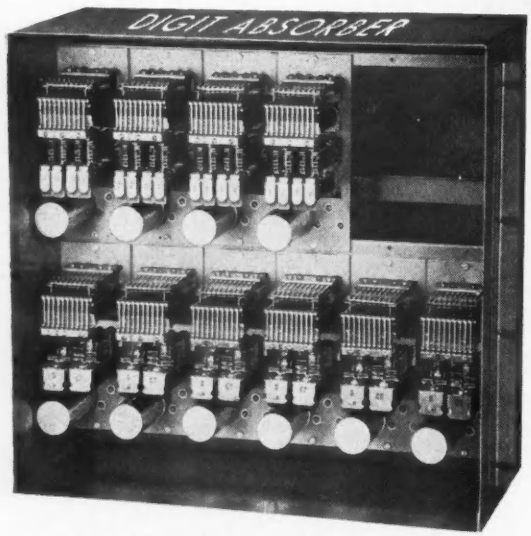
For Export: COPPERWELD STEEL INTERNATIONAL COMPANY, New York

SOLD BY LEADING DISTRIBUTORS

CONDUCTIVITY STRENGTH PERMANENCE

PROVED IN SERVICE FOR OVER 40 YEARS

Can your Switchboard handle 2-5 DISTANT DIALING?



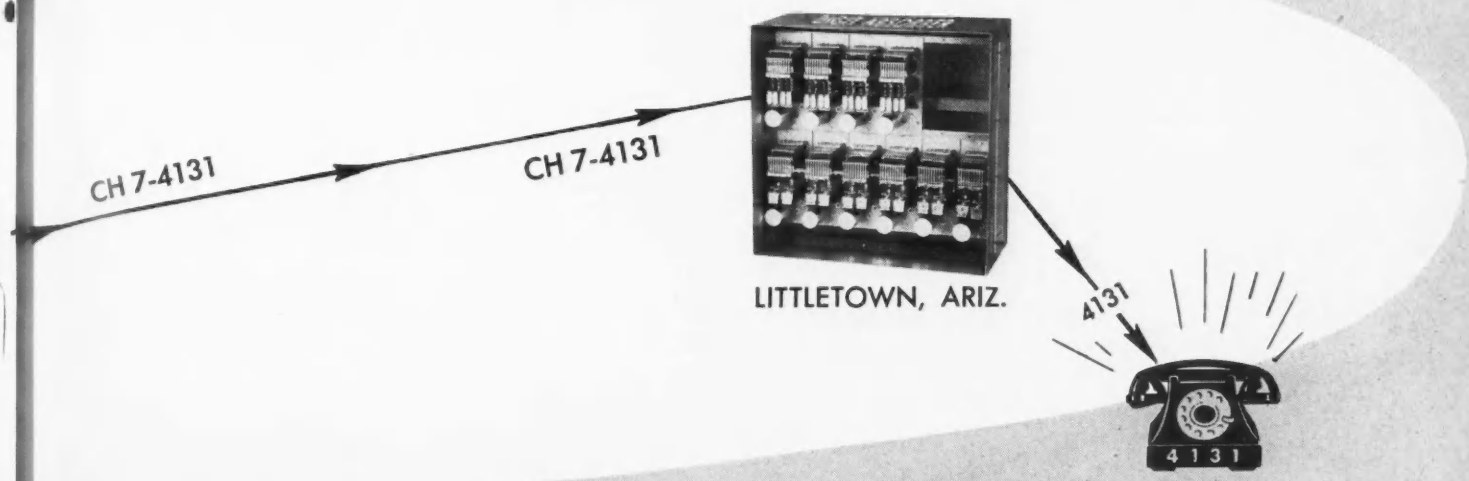
Typical Relay Case for Digit Absorber.

The Universal Digit Absorber employs simple circuity with a magnetic impulse counter, together with other standard relay apparatus of recognized manufacture.

Other UNIVERSAL Telephone Equipment:
Code-to-Selective RINGING CONVERTER
COMPUTER INTERCEPT

INDEPENDENT

It can with a UNIVERSAL DIGIT ABSORBER*



DIRECT DISTANCE DIALING REQUIRES A 2-5 CODE

The nationwide dialing plans for operator and direct distance dialing require that all stations be recognized by a 2-5 code. Few dial switchboards of earlier design have provisions for adding digit absorbing features economically. The Universal Digit Absorber fills this need easily and at nominal cost. Installation requires very little time.

The ever-increasing requirements of Extended Scope Dialing on a universal numbering arrangement are easily handled by the Universal Digit Absorber. The Digit Absorber is a factory assembled, fully-wired, applique unit that can be added to any existing dial switchboard to pad in three digits of exchange code (ABX) or four digits in the case of a small digit dial unit.

There are two types of Universal Digit Absorbers, depending on the complexity of the exchange codes assigned:

*19-S unit will handle exchange codes, as illustrated by AB-X, where the "X" digit is not a duplicate of the "A" or "B" digit.

*19-L unit is required where the "X" digit is a repeat of either the "A" or "B" digit.

In addition, Universal offers a Trunk Digit Register unit which can be applied to "Trunk on Line" dial units where five or more digits are required to be delivered to a 3 or a 4 digit tributary exchange.

TELEPHONE DIVISION

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CONTROLS CORPORATION
OFFICE AND PLANT – CARROLLTON, TEXAS
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23 BRODERICK ROAD BURLINGAME, CALIF	1594 SOUTHLAND CIRCLE, N. W. ATLANTA, GA
6100 EXCELSIOR BLVD MINNEAPOLIS 16, MINN	165 PROSPECT STREET PASSAIC, N. J.

*Pat. Pend.

Mail this coupon to the nearest address.

Gentlemen: I am interested in your Universal *Digit Absorber* for 2-5 Numbering.

Name_____

Position_____

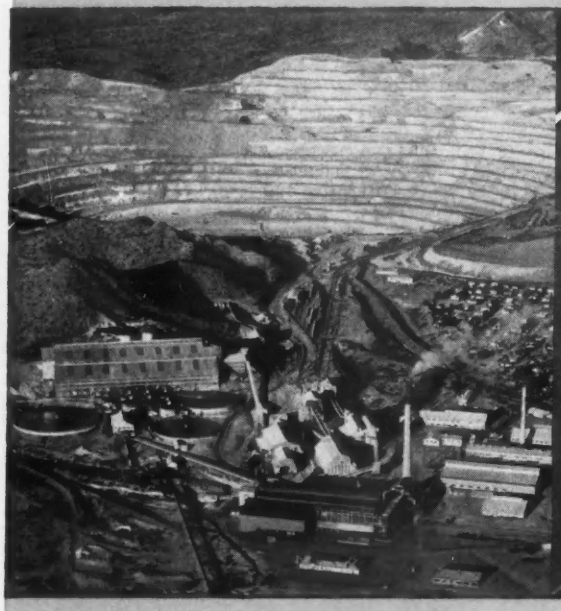
Firm_____

Address_____

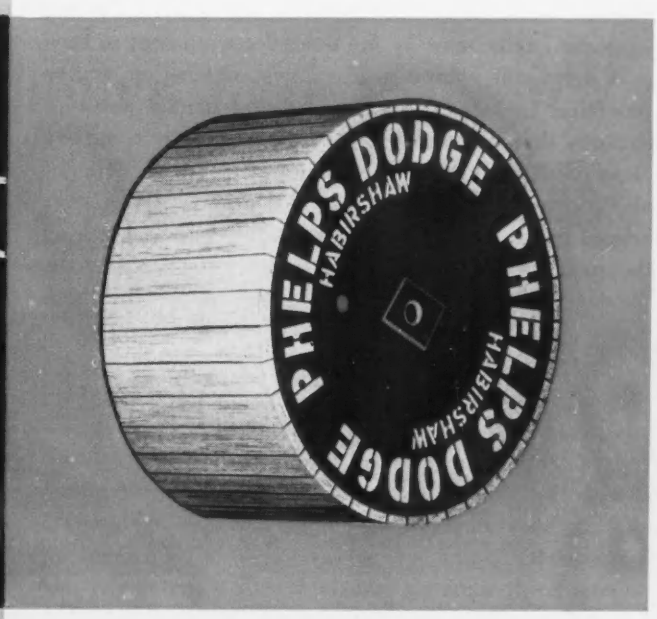
City_____ State_____

E-1-15

Now... A Complete Line of Telephone Wire and Cable with the Famous Phelps Dodge "Mine-to-Market" Name!



- Highest grade copper from Phelps Dodge's own open-pit mines.
- Finest insulating materials for long-life service assured by exhaustive laboratory and field tests.
- Careful control of quality throughout fabrication to meet the most exacting specifications.
- Years of manufacturing experience in the communications field.
- Complete line of paper and plastic insulated telephone wire and cable to serve your needs.



PHELPS DODGE COPPER PRODUCTS CORPORATION

PHELPS DODGE COPPER PRODUCTS CORPORATION

SALES OFFICES: Atlanta, Birmingham, Ala., Cambridge, Mass., Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Fort Wayne, Greensboro, N. C., Houston, Jacksonville, Kansas City, Mo., Los Angeles, Memphis, Milwaukee, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Rochester, N. Y., San Francisco, St. Louis, Seattle, Washington, D. C.

Washington

(Continued from page 16)

Excise Taxes

EXCISE TAX matters, for telephone companies, offer two areas for conjecture — the prospects for reduction or removal of the levy, and the chances for success of the proposal to transfer the local telephone excise to the states.

The Federal-State Action Committee's plan to transfer the excises to the states is, of course, a distinct threat to hopes that the levy will some day be repealed, or at least that the World War II increases will be removed. Once it is "imbedded" in the state tax structure, chances of getting it eliminated would virtually vanish.

While the proposal is one which warrants careful watching, most Washington observers with whom we have discussed the matter see little real prospect that the plan will ever be put into effect, for several reasons — normal reluctance by the federal government to turn over a revenue source to the states; opposition to any reduction in federal revenues at this crucial point in national defense; and vigorous objections by a variety of interests — ranging from Congressmen to officials of "poorer" localities — against either turning over related federal spending projects to the states, or making the spending programs in given states or localities dependent on tax revenues collected in the same localities.

The same factors generally militate against any reduction in the federal impost on communications services, at this time of increased defense budgets, proposals for federal support of science education, and international stresses of all types. About the best the telephone industry can do, it is felt in many quarters, is to emphasize the discriminatory nature of the telephone excise, to counteract thinking that the levy is a permanent part of the tax structure, and to obtain for telephone taxes some sort of priority when the day comes that tax cuts are feasible.

All regulated industries doubtless will watch with at least academic interest the efforts of a House Interstate & Foreign Commerce subcommittee headed by Rep. Morgan M. Moulder (D., Mo.) to demonstrate that federal regulatory agencies during the Eisenhower administration have been improperly carrying on their functions.

Congressional investigations will be making a lot of headlines in the newspapers, and some in the trade press, but their lasting effect is open to some question.

Insofar as communications excises are concerned, the industry is not the only group making plans to inform all concerned about the discriminatory nature of the levies. At last year's' convention of the National Association of Railroad & Utilities Commissioners, the NARUC President was directed to appoint a special committee to work for elimination of the imposts on communications and transportation services.

Microwave Radio Policy

WHAT CONTINUES to be perhaps the most significant proceeding at the Federal Communications Commission in some years for the common carrier communications field — the Commission's microwave radio policy case, in which the FCC must decide ultimately whether and how generally to permit private point-to-point communications systems — continues in '58.

The question of whether the FCC has statutory authority for, or should adopt, a policy of protecting the role of common carriers by restricting the use of the radio spectrum above 890 megacycles by private users was the dominant theme of the legal briefs. It will be recalled that the FCC held oral hearings on the subject last summer.

The common carrier position, as expressed by AT&T, was that "The radio spectrum is one of our most valuable resources. It is clearly not unlimited. Broadband multichannel common carrier systems provide a far more efficient use of the spectrum than is possible through a plurality of private systems.

"The general public is, and will remain, dependent on the common carriers for the communications services so essential to the nation both in peace and in war. The Commission would be derelict in its duty if it did not consider the adverse effect on the users of private communications of a policy of unrestricted licensing of private systems — effects which would be compounded if general sharing and interconnection were permitted.

"We urge that the Commission allocate sufficient frequencies to the common carrier services to take care of the growing needs of the general public, and continue to refuse to embark on a program of unrestricted licensing of microwave radio, inasmuch as this would result in an inefficient development of the spectrum and do great injury to the communications common carriers and to the public as a whole."

USITA and Western Union emphasized many of the same points, with the telephone association declaring that "Regulated common carrier service should not be sacrificed to enhance competition in equipment manufacturing."

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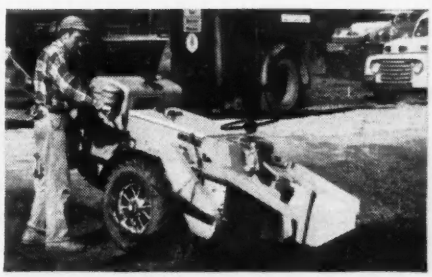

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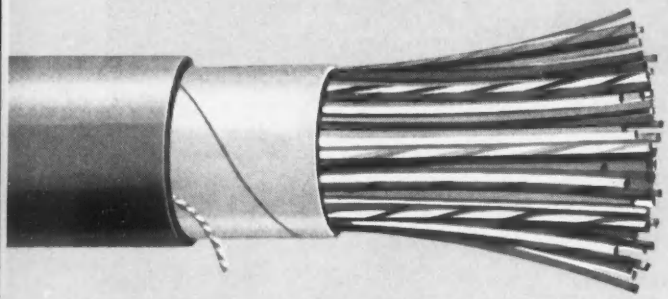

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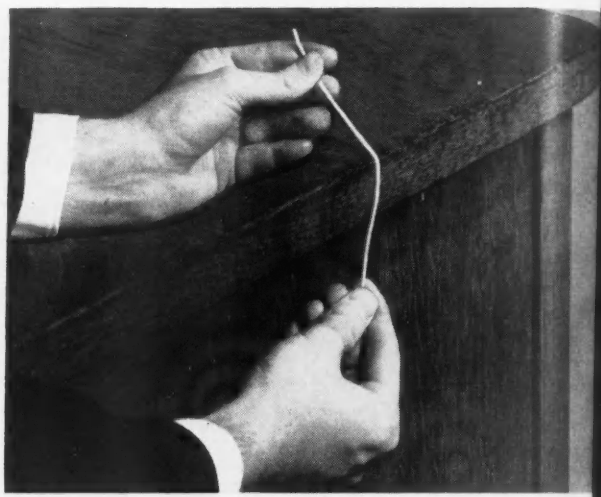

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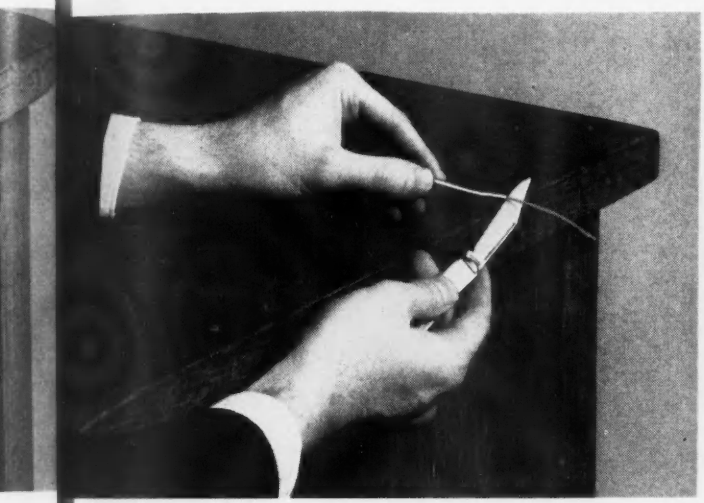

2 Skin it! See how quickly the conductor is ready for soldering. *No time is lost scraping enamel.* No frayed ends to create fire hazards or collect dust.

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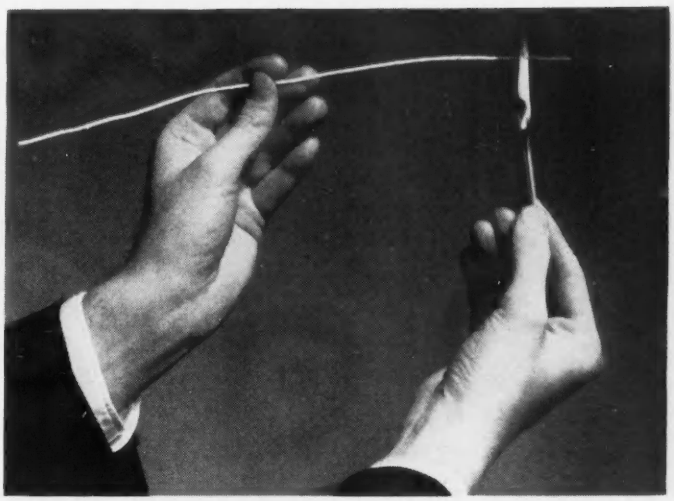

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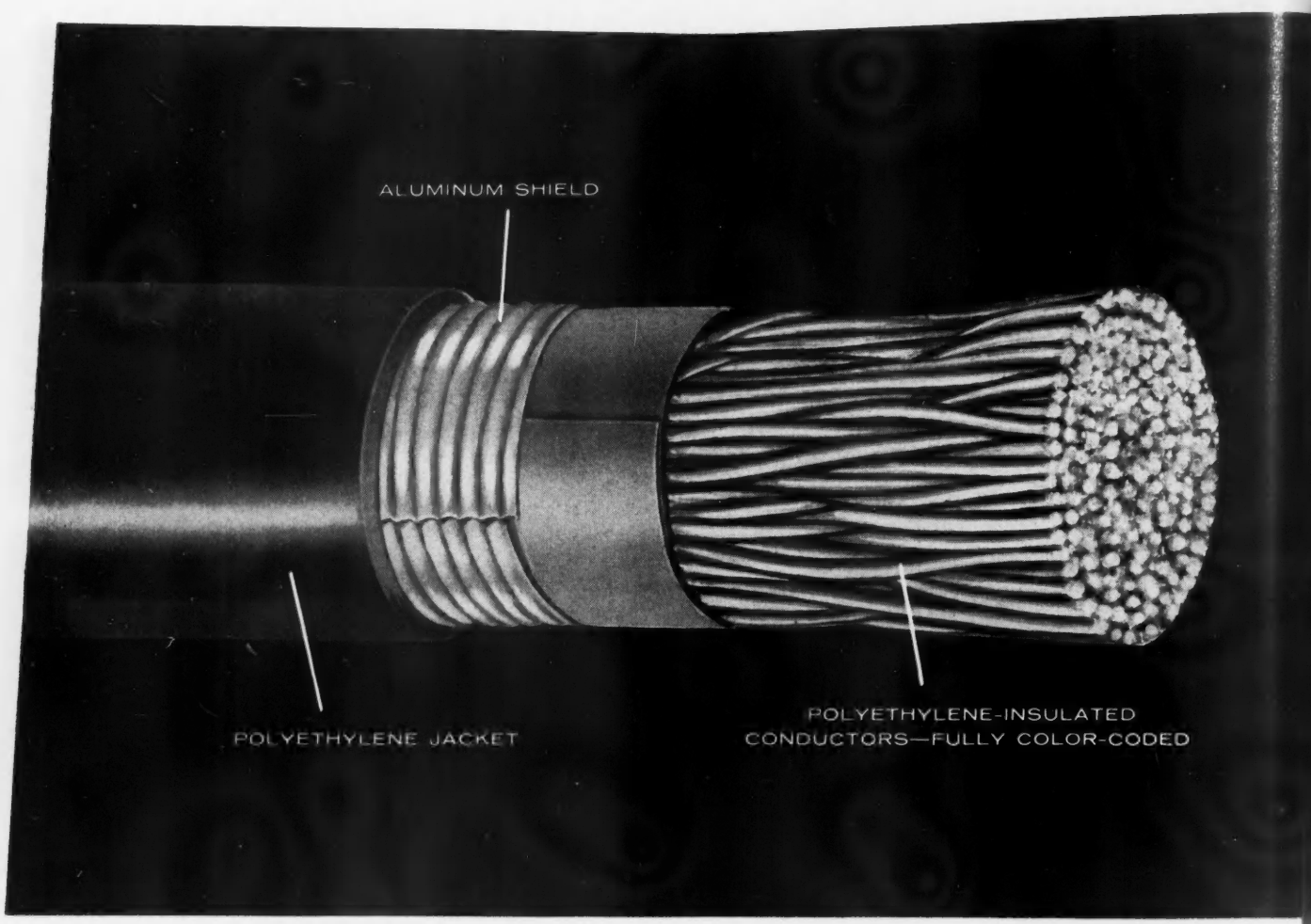

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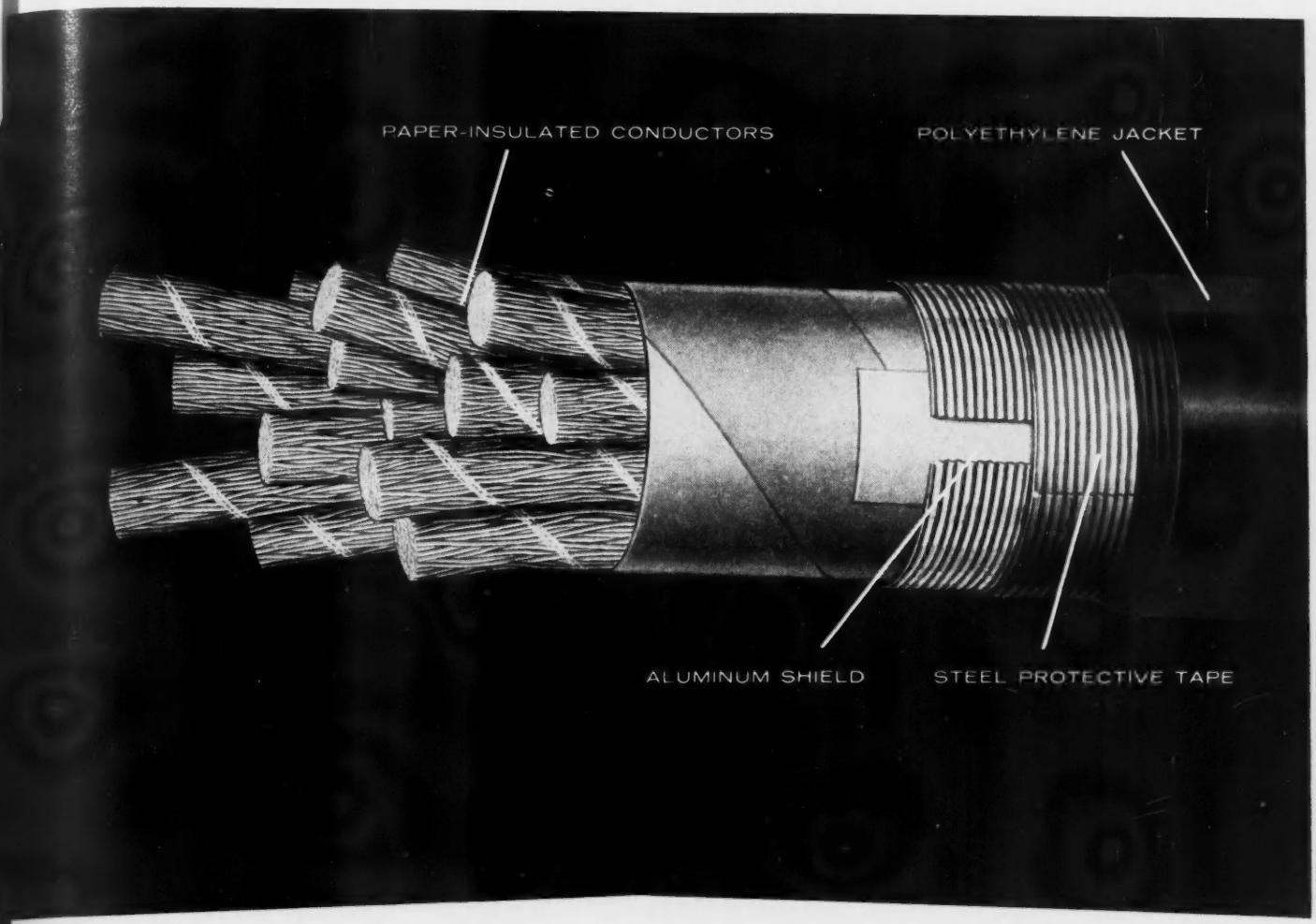

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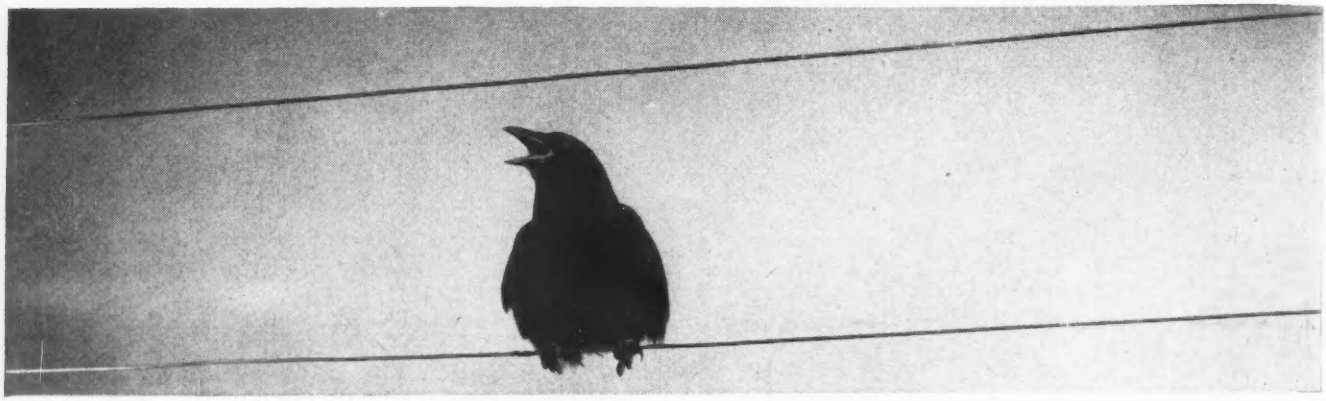
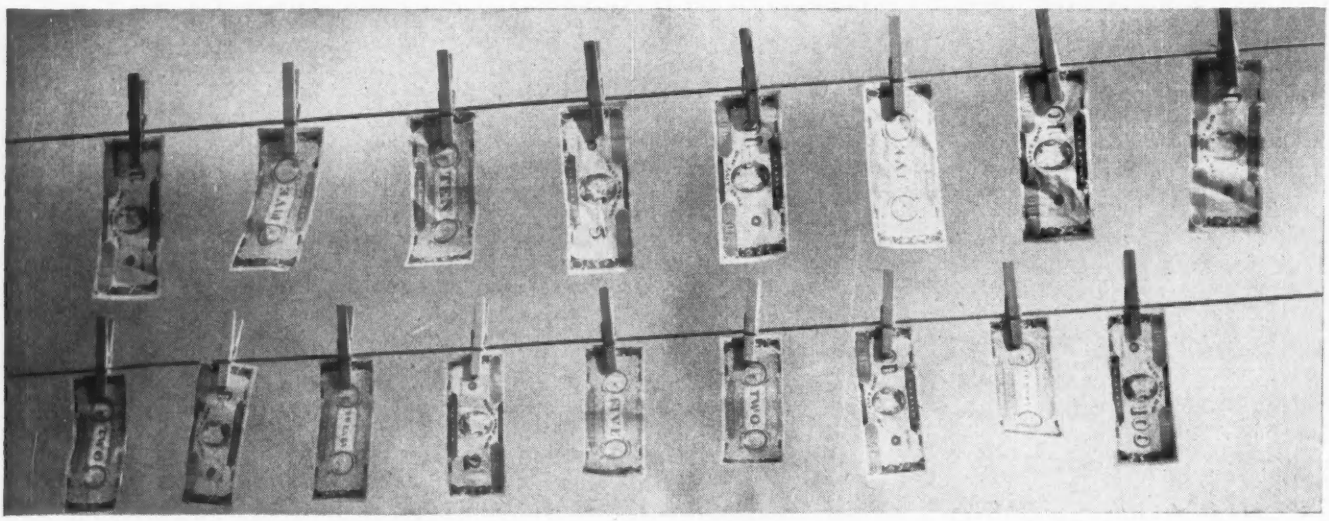


can carry more toll revenue



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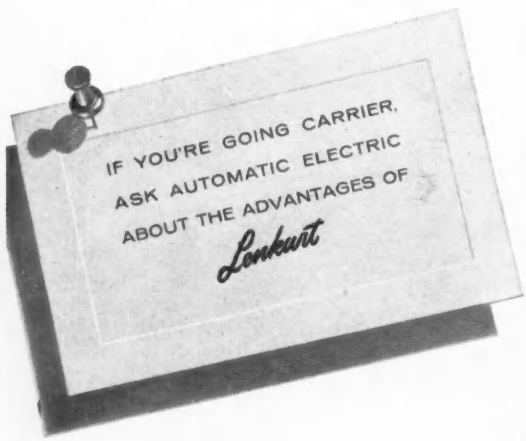

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GENERAL SYSTEM

EDITORIAL

"Decision From Virginia"

AROUND our place any order issued by one of the nation's regulatory commissions gets more than a passing glance and a quick trip into the reference files. In fact, our experience has taught us skip reading of a commission order is one sure way to miss out on some good, informative facts.

For example if we had read only the first and concluding paragraphs of an order issued last month we would have learned two facts: (1) The Chesapeake & Potomac Telephone Co. of Virginia had requested a rate adjustment; and (2) The Virginia Corporation Commission had granted the request.

But such hurried reading would have caused us to overlook the fact that another regulatory commission has duly recognized the fact that in *the long run, a telephone company's increased earnings will benefit the consumer through better service.*

There is plenty of evidence of such thinking in the Virginia Corporation Commission order giving the C&P Tel. Co. of Virginia all that it asked for in its original petition of July 17, 1957 — approximately $7,228,000 additional annual gross revenues that will produce an estimated $3,346,000 additional annual net earnings.

The evidence shows up in the majority opinion written by Commissioner *Lester H. Hooker* and concurred in by Commissioner *Jesse W. Dillon.* In part this opinion said: —

"It is manifestly impossible for a utility to survive and give the service demanded by the business and social needs of the community unless it earns sufficient money to pay its operating expenses and to make the proper allowances for depreciation, and permit it to earn such reasonable return as will justify public investment in its securities and allow it to obtain the necessary finances to build the extensions needed by the advancing interests of the community.

"The company has forcefully pointed out to us that the higher cost of new and replacement plant results in a consistent and almost constant decline in its rate of earnings . . . The result is that the company never is able to earn for a substantial period the level of return contemplated by the commission and rate cases follow one after another. This factor is called attrition. We believe that an allowance should be made for this factor."

In the utility field where regulation has been substituted for competition such opinions herald the end of an era that found some regulatory commissions considering small profits as being in the public interest and disregarding the fact that where regulation permitted higher earnings, the earnings encouraged expansion and improvement that in turn benefited the public.

We believe its time for more regulatory bodies to face up to such facts and realize *each telephone company must earn enough to justify broad planning for the future and the long-term risks new and revolutionary service improvement require.*

There are plenty of records to prove that with sufficient earnings, a telephone company can choose the type of construction program that promises the best return over the years ahead. Those same records also prove that taking the long view means greater initial cost and longer term risks, and the alternative is a program costing less at the outset but more later on with poor long-range results.

Commissioner Hooker added weight to such statements with his majority opinion which actually is in agreement with the fact that in order to build for the future, a telephone company must be able, on a more competitive footing, to attract the investment dollars of the American people, and to attract those dollars, the company must be permitted a larger earning potential.

In 1958 we hope to see more evidence of such regulatory understanding. If we find it consistently popping up in commission orders then, and then only, will commissions be approving earnings adequate to attract more capital investment to telephone companies and thereby permitting the companies to keep pace with the service demands of today and the future.

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The Fifty Largest Utilities as listed in the 1957 FORTUNE DIRECTORY

★ American Tel. & Tel. (New York)
★ Pacific Gas & Electric (San Francisco)
★ Consolidated Edison of New York
★ Commonwealth Edison (Chicago)
★ American Gas & Electric (New York)
★ Tennessee Gas Transmission (Houston)
★ Public Service Elec. & Gas (Newark, N. J.)
★ Southern California Edison (Los Angeles)
★ Southern Co. (New York)
★ Detroit Edison (Detroit)
★ Philadelphia Electric (Philadelphia)
★ Niagara Mohawk Power (Syracuse, N. Y.)
★ General Telephone (New York)
★ El Paso Natural Gas (El Paso, Texas)
★ Columbia Gas System (New York)
★ General Public Utilities (New York)
★ Consumers Power (Jackson, Mich.)
★ American & Foreign Power (New York)
★ American Natural Gas (New York)
★ United Gas (Shreveport, La.)
★ Texas Utilities (Dallas)
★ Middle South Utilities (New York)
★ Pacific Lighting (San Francisco)
★ Texas Eastern Transm. (Shreveport, La.)
★ Consolidated Natural Gas (New York)
★ Central & South West (Wilmington, Del.)
★ New England Electric System (Boston)
★ Pennsylvania Power & Light (Allentown)
★ Union Electric (St. Louis)
★ Ohio Edison (Akron)
★ Virginia Electric & Power (Richmond)
★ Peoples Gas Light & Coke (Chicago)
★ Northern States Power (Minneapolis)
★ Cleveland Electric Illum. (Cleveland)
★ West Penn Electric (New York)
★ Duke Power (Charlotte, N. C.)
★ Long Island Lighting (Mineola, N. Y.)
★ Baltimore Gas & Electric (Baltimore)
★ Duquesne Light (Pittsburgh)
★ Northern Natural Gas (Omaha, Neb.)
★ Wisconsin Electric Power (Milwaukee)
★ Transcontinental Gas Pipe Line (Houston)
★ Panhandle Eastern Pipe Line (New York)
★ Public Service of Indiana (Plainfield)
★ Florida Power & Light (Miami)
★ Illinois Power (Decatur, Ill.)
★ Western Union Telegraph (New York)
★ Boston Edison (Boston)
★ New York State Electric & Gas (Ithaca)
★ Cincinnati Gas & Electric (Cincinnati)

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Among the 50 largest utilities, only <u>one</u> electric or telephone utility is a Preformed prospect...

the rest are Preformed customers

In July, 1947, Preformed Line Products Company didn't have a customer; all the electric and telephone utilities were prospects. Today, the situation is almost completely reversed.

For example, in FORTUNE's list of the "Fifty Largest" utilities, only one of the *electric* and *telephone* utilities mentioned is still a prospect; all the rest are now Preformed customers. In other words, the Preformed principle of using preformed helical rods for line accessories has gained almost complete acceptance in only 10 years.

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TRAFFIC DEPARTMENT SUPERVISION

By ALTON H. STEELE*

Tremendous penalties are paid for not having an effective and well developed program to control incidental absenteeism. Few activities of the traffic supervisor have wider reaching effects than maintaining a good attendance record for the office. Such a record reduces costs, improves customer service, reduces losses and improves employe morale and respect for management.

THERE IS a continual small leak in the "dyke of good attendance" in the Traffic Department. Unless Traffic Supervision keeps plugging at it with alert and well-guided fingers, this leak will grow into a flood of unnecessary expense and other evils, which reduce the efficiency of traffic operations. Apathetic supervision can allow the evils of unchecked incidental absenteeism to grow alarmingly without realizing it. Reclaiming the lost ground after the dyke is gone is long and difficult.

Many of us have a tendency to look at poor attendance as something inevitable or unimportant. Too often, little thought or consistent effort is made toward developing or maintaining a good attendance record among traffic employes.

Let's examine the costs, both direct and indirect, and the other problems aggravated by excessive absenteeism. If we then decide what is good attendance, we can reach some conclusions as to what we should do to attain a good attendance program for our own particular places in the Traffic Department.

When the supervision of an office fails to provide, and firmly administer, an effective plan to control incidental absence, it has an adverse effect on operating costs, customer service, force losses and employe morale.

What does absence cost in dollars and cents? An absence rate of 5 percent (of employe hours on duty), which is by no means an uncommonly high figure, requires an additional person on the payroll for each 20 who are needed to conduct the business of the office. This "extra" employe, per 20, requires as much training, probably $500 worth, as any other employe, and costs just as much in salary, vacations and benefits as any other employe — perhaps more, for in many smaller offices absences have to be covered by calling someone in on overtime!

A loss rate of 20-35 percent a year, again not uncommon figures, but rather conservative, means replacing this extra girl in each 20, every three or four years, repeating the cost of training. Companies with the more

*Mr. Steele is District Superintendent, Peninsular Telephone Co., Lakeland, Fla.

liberal "paid absence" provisions in their contracts naturally have higher costs due to absence than those not so liberal, but in either case it is easy to approximate the annual savings which can be realized by a better administered system of absentee control. In the example above, if the wage schedule was only $1 an hour, about $500 a year could be saved by reducing the absence rate only one percent in an office of 20 people. Under many contracts the financial savings are far higher than this example.

Absenteeism and Employe Morale

EMPLOYES who are consistently unreliable in their attendance are in the same category as employes whose work is unsatisfactory, or who are unwilling to carry their fair share of the load. Quite often they are the same people. Good intentioned employes usually do not respect those who are unreliable in attendance, and more important, they lose respect for management when no concerted effort is made toward correcting abuses.

Good employes, (*and wouldn't you be the same?*) become dissatisfied and get a feeling of hopelessness when management is so unconcerned with reliability that promotions of people who have unsatisfactory attendance records are permitted.

The attendance record of an office is also an index of the quality of service furnished to its customers. Irregular attendance naturally affects speed of answers and creates a scheduling headache. Most of the new employes in the Traffic Department are people who are just maturing in body and mind. It is a primary duty of management to provide for these new people a working environment that will build a proper sense of values and help them gain strength of character.

Good people will not long remain where the management is derelict in this duty, and unfair to its good employes by tolerating or even rewarding unreliability in the poor ones.

As mentioned in the paragraph above, force losses are very much affected by the proper control of absence. There is a widely held belief among traffic supervisors that at the time of a force shortage, the company cannot afford to dismiss a person because of poor attendance. Nothing is much further from the truth.

When there is a force shortage the need for management to be consistent and place proper emphasis on good attendance is greater than at any other time. All the benefits of a well administered program to control absenteeism really pays off at this time. A consistently good program will improve the overall service results of an office and will reduce the force requirements, too!

The Absence Rate

MANY traffic supervisors do not realize that the absence rate for an office is a measurement of the quality of service, the attitude and the general climate surrounding people within that office, and is no less important than other performance measurements.

Good service can be given only by employes who have good intentions and who have a high degree of reliability in being on the job when they are scheduled. The loss of anyone who does not meet these standards should not be classified as a loss, but as a gain, for the organization is better off without them.

What is a good attendance record? It is a record in which there is no absence beyond that which is absolutely necessary. In many companies, an incidental absence record of 2.4 percent to 3 percent is considered very good. This is an average of 6 to 7½ days absence per year for each employe on the payroll.

Let's see what steps would be required to establish an effective plan to control absenteeism: —

(1) *A complete and convenient system of records* showing each employe's attendance for at least a year should be established and maintained on a current basis. (Usually some form of card system.)

(2) *An analysis of the record* should be made to reveal the following overall information about the office: (a) Average number of days absence per employe per year; (b) percentage of employes having more than twice the annual rate (or some other unsatisfactory figure); (c) percentage of employes in item "b" with less than one year of service; and (d) percentage of employes in item "b" with less than two years of service.

(3) *Conferences should be held with all traffic supervisors* for the purpose of developing a group attitude and plan of action to improve the attendance record of the office. Each supervisor should be given a detailed summary of the attendance records of the people reporting to her. Those cases requiring prompt action should be so designated.

A similar summary should be provided every six months. In these conferences actual cases should be discussed to lead the entire supervisory group into a knowledge of how the various kinds of cases should be handled. The way to conduct interviews with employes about poor attendance and the way to make a proper record of the contact should be covered in great detail.

The following general procedures can serve as a guide:

(a) *No absence beyond that which is absolutely necessary* is satisfactory. Absence in excess of twice the office average should be considered unsatisfactory, requiring appropriate action.

(b) *Incidental absence control* should be made the responsibility of an employe's immediate supervisor, whether the supervisor is an Assistant Chief Operator, Chief Operator or some clerical supervisor. The immediate supervisors should have access to the employe's records and should give all warnings and even make dismissals when required. The Chief Operator and Traffic Man must be consulted whenever a dismissal is contemplated, but the dismissal should be made in the name of the supervisor.

(c) *All employes should be interviewed periodically*

about their job performance and attendance. A proper record should be kept of all such contacts, particularly where an employe's record is poor enough that dismissal might later be indicated.

Under many working agreements a company is obligated to give wage increases at scheduled intervals, however, it is not obligated to put an official stamp of approval on an employe's job performance unless that approval is merited. As a part of management, a supervisor is derelict in her duty if she fails to discuss a poor record with an employe at the time the employe is advised of a wage increase. Likewise an employe whose record is above average should be praised when she receives a wage increase.

(d) *Promotions should be confined to good-intentioned people whose absence rate is better than the office average.* If the working agreement requires posting notices of openings for promotions, the requirement of an above average attendance record should be included in such a posting. In any case, it should be made known generally throughout the office that such policy exists in regard to promotions, and that there will be no deviations.

(e) *Unreported absences should not be tolerated unless emergencies are present.*

The record of the employe involved should be thoroughly checked after an unreported absence and the employe should be contacted and told that her performance is unsatisfactory, and an appropriate warning given unless there was no reasonable chance for the employe to report.

(f) *The person receiving a report of an absence* should in all cases ask for, and record, the reason for the absence.

(g) *A somewhat lenient approach to granting time off for urgent personal reasons should be followed.*

These requests, when granted, fall outside the category of incidental absence. If this is done on the basis of granting the same amount of time off to any employe with the same reason, a lot of employe good-will will be bought, and people will not be placed in the position of having to lie to meet what is to them somewhat of an emergency. Great care should be exercised not to place a premium on dishonesty.

(h) *Dismissals for poor attendance should be made whenever indicated.*

Each case should be fully documented showing a logical sequence of steps leading to dismissal. It should, in all cases, be shown that every reasonable effort was made to convince the employe that her job was in jeopardy and to show that the employe had not made the necessary improvement. Each of these cases should be followed up at the proper intervals and if an employe makes sufficient improvement she should be praised for it.

(i) *Incidental absence can be most effectively controlled by insisting that new people meet good attendance requirements.*

During the training period and the first two years of employment, the supervisors should be particularly alert to spot potential cases of high absence rates and take the necessary corrective action.

When a person is allowed to get many years of service with an unchallenged poor attendance record, the problem of securing improvement or dismissing her becomes very difficult. Regardless of the period of service, all cases of poor attendance should have some action taken, however, in those individual cases with long service it is well to confer with the traffic man to determine what action may be appropriate.

There are many programs for the effective control of absence. One of the best offers some recognition to people with perfect attendance records — an orchid, a luncheon, or a personal letter of commendation.

(4) *The Union should be informed* of the entire program regarding control of absence and given a full explanation of the approaches to be used.

There are other ways to round out a program for effective control of absence. One of the best of these is to offer some recognition to people with perfect attendance records. This recognition can take several forms, two of which are to give these people an orchid or a luncheon after some specific period, such as six months or a year, or by a personal letter of commendation mailed to their home.

It has been the purpose of this article to show the tremendous penalties paid for not having an effective and well developed program to control incidental absenteeism. It has the further purpose of showing what management in the Traffic Department can do about it. Of one thing there is no doubt — few activities of the Traffic Supervisor have wider reaching good effects than maintaining a good attendance record for an office. It reduces costs, improves customer service, reduces losses and improves employe morale and respect for management. A really good traffic job can not be done without keeping a diligent finger at the leak in the attendance dyke.—*Alton H. Steele.*

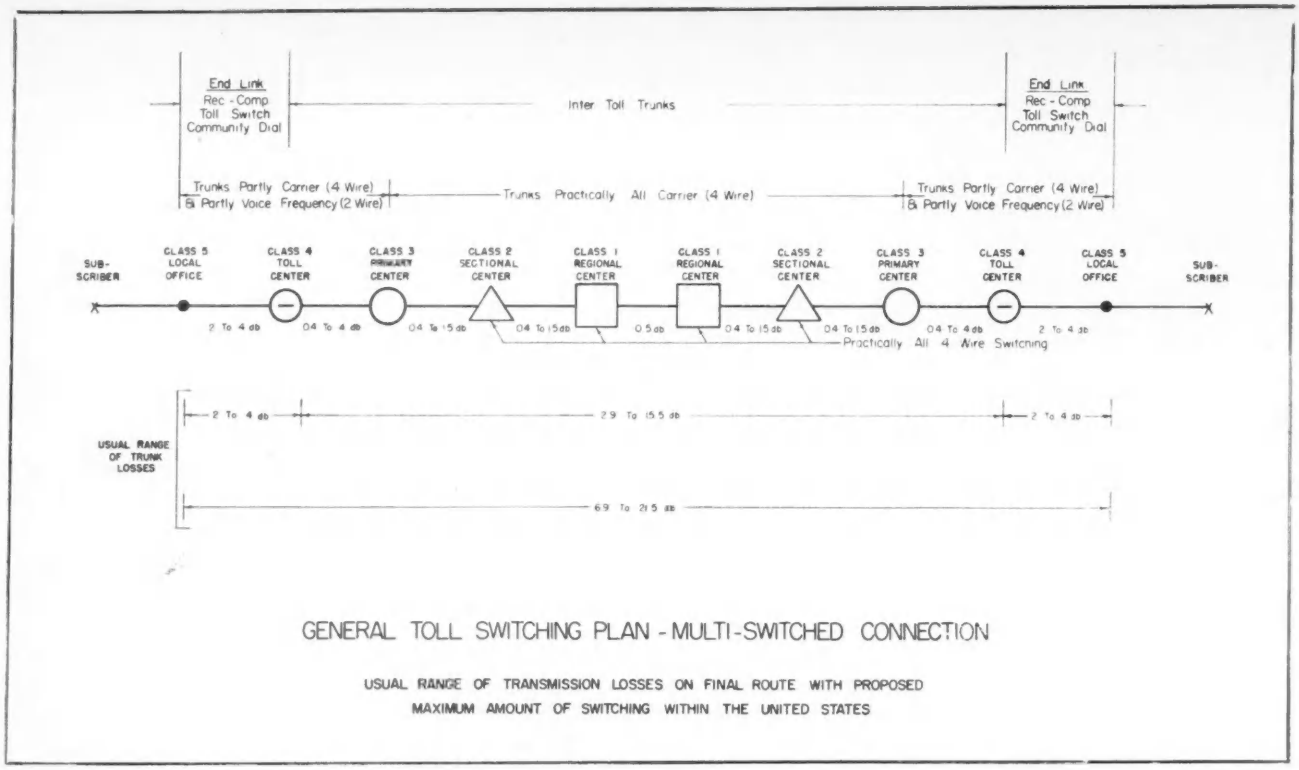
End Link
Rec - Comp
Toll Switch
Community Dial
Inter Toll Trunks
End Link
Rec - Comp
Toll Switch
Community Dial
Trunks Partly Carrier (4 Wire) & Partly Voice Frequency (2 Wire)
Trunks Practically All Carrier (4 Wire)
Trunks Partly Carrier (4 Wire) & Partly Voice Frequency (2 Wire)
SUB-SCRIBER
CLASS 5 LOCAL OFFICE
CLASS 4 TOLL CENTER
CLASS 3 PRIMARY CENTER
CLASS 2 SECTIONAL CENTER
CLASS 1 REGIONAL CENTER
CLASS 1 REGIONAL CENTER
CLASS 2 SECTIONAL CENTER
CLASS 3 PRIMARY CENTER
CLASS 4 TOLL CENTER
CLASS 5 LOCAL OFFICE
SUB-SCRIBER
2 To 4 db
0.4 To 4 db
0.4 To 1.5 db
0.4 To 1.5 db
0.5 db
0.4 To 1.5 db
0.4 To 1.5 db
0.4 To 4 db
2 To 4 db
Practically All 4 Wire Switching
USUAL RANGE OF TRUNK LOSSES
2 To 4 db
2.9 To 15.5 db
2 To 4 db
6.9 To 21.5 db
GENERAL TOLL SWITCHING PLAN - MULTI-SWITCHED CONNECTION
USUAL RANGE OF TRANSMISSION LOSSES ON FINAL ROUTE WITH PROPOSED MAXIMUM AMOUNT OF SWITCHING WITHIN THE UNITED STATES

CHART ONE.

TRANSMISSION: OUR PRINCIPLE PRODUCT

By J. B. SPRATLEY*

THE JOB of giving telephone service consists in general of two important parts:

(1) *Switching* — which provides the path or channel from any one customer to any other customer. The provision of these paths or channels in accordance with an economical pattern is a function of the General Toll Switching Plan. As you know, the General Toll Switching Plan is a joint undertaking of the Independent and Bell System Companies.

(2) *Transmission* — which includes everything necessary so that people who have been connected together can talk to each other easily, naturally, and economically. Transmission for toll is superimposed on the General Toll Switching Plan.

It seems to me that our customers are ordinarily little concerned with the mechanics of the switching operations, but they are greatly concerned if transmission is not what they think it ought to be. Consequently, from the customer's standpoint, transmission is our principal product.

There are today about 60 companies which have the responsibility of providing telephone service in Virginia, and all of us are mutually dependent on the others to achieve reasonably satisfactory transmission on a state-wide basis.

But transmission is not confined to Virginia alone. Transmission has increased in scope at an amazing pace until it is now world-wide. There has been tremendous expansion in this respect since the first telephone channels were established across the Atlantic by radio in 1927, just 30 years ago. This world-wide scope naturally adds complexity to our task.

Fundamental Basis

TRANSMISSION involves the application of the laws of nature, and all of us have undoubtedly found out by now that we can't argue with

**Mr. Spratley presented this paper at the 1957 convention of the Virginia Independent Telephone Association.*

physics. We can't chisel and we can't cut corners and if we try to anyway, we are likely to wind up with an abnormally large number of connections that are hollow or won't work at all, particularly if they are multi-switched.

There are many factors involved in the problems of taking care of transmission and keeping costs down. These are our dual and sometimes opposing responsibilities. New tools have only recently become available, such as short haul carrier and negative impedance repeaters which provide ways and means of doing the transmission job cheaper and better. The General Toll Switching Plan is itself a step toward a more economical plant.

In considering transmission, we have to take into account such things as the efficiency of our station sets, the design of our subscriber loops and trunks, noise induced from power systems, etc., each being a major topic in itself. In this paper, we shall discuss toll transmission and its application to the General Toll Switching Plan.

I am sure we would all agree that it would be nice if we could put amplifiers in all of our trunks and crank up the gains so that loss on each circuit would be just what we want it to be — zero would be a good figure and is in fact the long term objective.

Right now we are not in a position to attain readily a zero db trunk. The electronic tubes and transistors we rely on to provide amplification are fundamentally one way devices and we have to trick the equipment to provide two way amplification essential to telephone service.

Because of these tricks, echo or singing results if we try to use too much gain. So we can't argue with physics and we should provide the types of plant which will permit us to use as much gain as we need to meet our nation wide transmission objectives.

Today's Bargain — Carrier

THE REAL bargain today is short haul carrier and the right kind of carrier to fit each specific application will pay large dividends in several ways. There are a number of kinds of carrier and it is important that the kind be selected that will meet our requirements. There is nothing so permanent as a poorly engineered job.

The development people have done a lot for us in making cheaper carrier systems so that carrier is now being used in very large quantities. Whereas carrier some years back was only economical for very long toll circuits, it is now within our reach for distances sometimes as short as 10 miles. Perhaps some companies have even shorter carriers.

Let's review briefly what properly applied carrier will do for us:

First, carrier usually contains a substantial amount of built-in electronic gain. As compared with voice frequency facilities, lower circuit losses can frequently be obtained by simply turning a knob at no increase in cost.

Second, automatic transmission regulation on carrier systems is often an important asset in maintaining the losses within the limits required for the built-up connections such as the one which we shall discuss just a little later. Automatic transmission regulation of voice frequency circuits is not in normal use today. In deciding upon the need for automatic regulation equipment for each carrier system, factors too numerous to discuss here should be considered. However, we should remember that the line losses at carrier frequencies are higher than at voice frequencies and the effects of temperature variations are more serious.

Third, greater stability from the standpoint of echo and singing. This comes about because of the so-called four-wire transmission which carrier systems use, whereas short haul voice circuits normally have two-wire transmission. We think of four-wire transmission as that which uses two separate channels of transmission, one for transmitting in one direction and the other channel for transmitting in the other direction. This four-wire transmission permits us to control echo and singing much better than is normally possible with two-wire transmission. On account of our present design objectives, the control of echo is of vital importance in our toll plant today.

Echoes

AT A GIVEN overall toll circuit loss, echoes are dependent on two factors: (1) How fast does sound travel over the telephone facility?

(2) How smooth electrically are the telephone facilities being used? In other words, do they contain junctions of different types of plant which cause electrical reflections or echoes?

We know that sound traveling through the air is sometimes partly reflected back to the talker by a mountain or some other obstruction. In the same way, electrical currents are partly reflected back to the originating end at junctions of dissimilar facilities such as the junction of non-loaded cable and open wire. If strong enough, these reflections or echoes are heard by the talker or may cause the connection to sing.

Echo comes into the picture on direct or built-up connections of 25 miles or more and is more difficult to control as the distance increases. Acoustical echo is amusing to our customers, but on telephone lines, echo is usually annoying to them, the degree of displeasure depending on how loud the echo is and how long it is delayed. Echo is not only annoying, but it causes a person to lower his voice to relieve the discomfort the talker experiences in his ear and this naturally is a further detriment to transmission. People will tolerate a much louder echo if the delay is short than if it is long.

Because sound travels at a speed 5 to 10 times faster over carrier than over a voice frequency loaded cable circuit, a carrier circuit will produce less delay and therefore much less detrimental effect from echo than a voice frequency cable circuit of the same length. Consequently, due to the trend towards using more and more carrier, the problem of controlling reflections or echo is gradually being reduced.

There is no type of telephone facility that is entirely smooth electrically

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years and years of operation without replacement. XY Dial Systems are the only step-by-step equipment with this feature that assures you of extra reliability and service economy. It pays to "go XY Dial" when you convert your exchange to dial.

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and all contain minor variations which produce minute echoes. These minor variations usually determine the minimum loss at which it is practicable to operate each facility. Factors have been developed for various types of facilities which evaluate the effect of echo on toll circuit loss. These factors, when multiplied by the length in miles, give the lowest practicable toll circuit loss that we should use. For instance, the factors per mile for several types of facilities are:

	dbs Per Mile
Loaded Cable H-88 (2 wire)	**.03**
Open Wire (2-wire)	**.01**
Open Wire Carrier with Automatic Transmission Regulation	**.0017**

From these factors it can be seen that the echo characteristics of carrier facilities are about 6 times better than open wire and 18 times better than H-88 loaded cable pairs. Similar factors for other types of facilities are given in Section VI of the current Blue Book. These factors are called "Via Net Loss" factors. Under the General Toll Switching Plan, the minimum loss permitted by the echo characteristics of the facilities are required for every toll circuit and these minimum losses are determined by using the factors just referred to. These factors do not allow for major irregularities such as the junction of open wire and nonloaded cable, but only for the minute irregularities.

Speaking generally, singing may be considered to be a very bad case of echo, so bad that the gain in the electronic gear sets up oscillations at audible frequencies.

General Toll Switching Plan — Long Haul — Switched Connections

NOW that we have discussed such things as the world-wide scope of transmission, the limitations of electronic equipment, the boost we are getting from short haul carrier, and what echo does to us, let's consider next the transmission considerations and objectives on a long built-up connection in accordance with the General Toll Switching Plan.

Chart 1 shows a built-up connection having a maximum number of switching points contemplated within the United States by the General Toll Switching Plan. All local switching offices are assigned to Class 5. Toll switching centers are assigned to Class 1, 2, 3, and 4 depending upon their position in the trunking pattern.

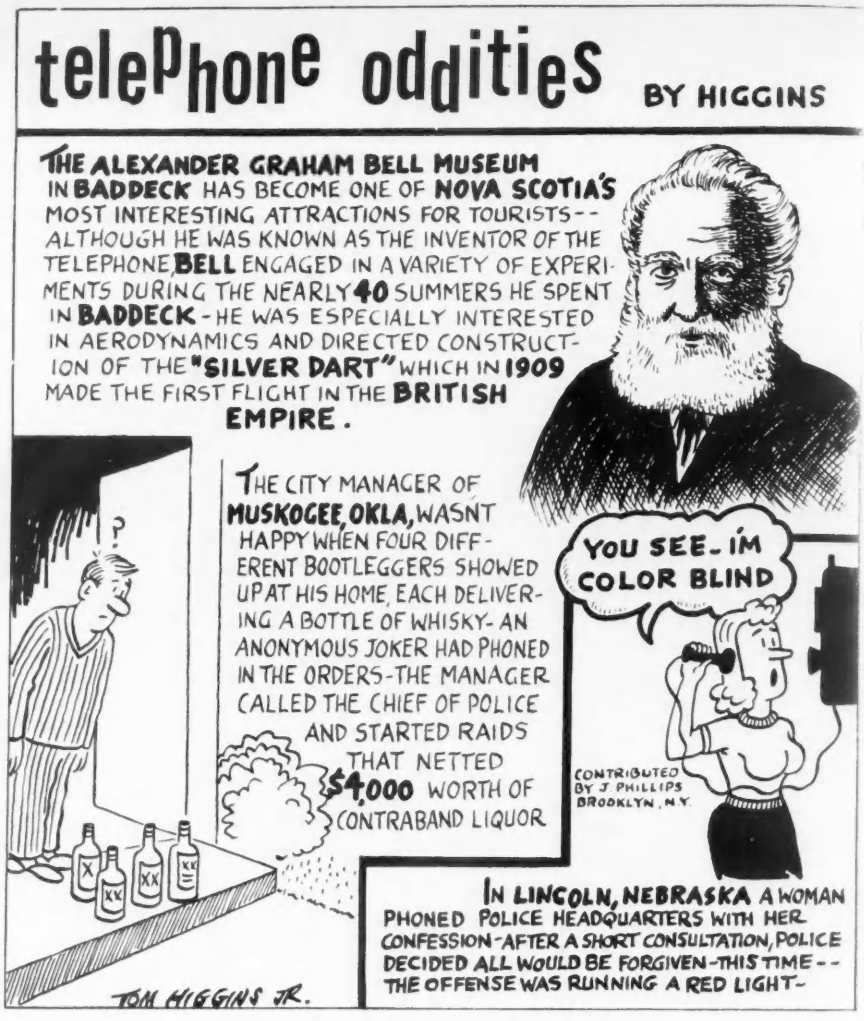
It is important to note a distinction we shall make during the remainder of this paper between the end link trunks on hand and the intertoll trunks on the other.

The end link trunks are sometimes referred to as toll connecting trunks and include trunk groups such as recording-completing, toll switching, community dial and CAMA. These end links connect the local switching center (where subscriber loops terminate) to its toll outlet office.

The intertoll trunks are those which interconnect the Class 1, 2, 3, and 4 toll switching centers (including trunks between centers having the same classification), and are, as we shall discuss later, always used on a "Via" basis; that is, they are connected to other toll facilities at each end and not at any time to subscriber loops.

Chart I shows, among other things, the usual range of transmission losses of inter-toll trunks, and the same information for the end links. Few connections are expected to contain as many switch points as are shown on Chart I and the overall maximum losses shown should be quite rare.

The intertoll trunks interconnecting Class 1, 2, and 3 type switching centers are usually fairly long or very long, and are practically all carrier. There are about 150,000 of these circuits — much fewer than the millions of subscriber loops and end links.—*To be concluded in the next issue.*.


telephone oddities
BY HIGGINS
THE ALEXANDER GRAHAM BELL MUSEUM IN BADDECK HAS BECOME ONE OF NOVA SCOTIA'S MOST INTERESTING ATTRACTIONS FOR TOURISTS--ALTHOUGH HE WAS KNOWN AS THE INVENTOR OF THE TELEPHONE, BELL ENGAGED IN A VARIETY OF EXPERIMENTS DURING THE NEARLY 40 SUMMERS HE SPENT IN BADDECK - HE WAS ESPECIALLY INTERESTED IN AERODYNAMICS AND DIRECTED CONSTRUCTION OF THE "SILVER DART" WHICH IN 1909 MADE THE FIRST FLIGHT IN THE BRITISH EMPIRE.
THE CITY MANAGER OF MUSKOGEE, OKLA, WASN'T HAPPY WHEN FOUR DIFFERENT BOOTLEGGERS SHOWED UP AT HIS HOME, EACH DELIVERING A BOTTLE OF WHISKY- AN ANONYMOUS JOKER HAD PHONED IN THE ORDERS-THE MANAGER CALLED THE CHIEF OF POLICE AND STARTED RAIDS THAT NETTED $4,000 WORTH OF CONTRABAND LIQUOR
YOU SEE- I'M COLOR BLIND
CONTRIBUTED BY J. PHILLIPS BROOKLYN, N.Y.
IN LINCOLN, NEBRASKA A WOMAN PHONED POLICE HEADQUARTERS WITH HER CONFESSION-AFTER A SHORT CONSULTATION, POLICE DECIDED ALL WOULD BE FORGIVEN-THIS TIME-- THE OFFENSE WAS RUNNING A RED LIGHT-
TOM HIGGINS JR.

A TE&M Training Course

MODERN CABLE CONSTRUCTION

By JOHN S. REED

In Chapter X-B of his training course on "Modern Cable Construction," Mr. Reed discusses characteristics of Copperweld messenger strand and methods of measuring tension in cable messenger. Chapter X-A of this article appeared in the September 15, 1957 issue of "Telephone Engineer & Management."

Characteristics of Copperweld Messenger Strand

ANOTHER type of messenger strand employed in aerial cable construction makes use of high strength steel wires jacketed with a thick coating of copper for permanent protection against corrosion.

These features are intended to provide maximum service life with minimum maintenance. With Copperweld messenger strand, it is not necessary to allow for loss of strength from corrosion, nor to anticipate replacement of the strand during the life of the messenger installation. Copperweld messenger strand is relatively unaffected by air-borne chemicals in industrial areas that would seriously corrode ordinary galvanized steel strand in a short time.

Physical characteristics of standard sizes of Copperweld messenger strand used in aerial cable installations are given in *Table XLV*. Sizes of messenger applicable for typical installations and the approximate normal sags and tensions for the installations are listed in tables contained in a bulletin on "Copperweld Messenger Strand for Aerial Cable Construction," E.D. 1662, which is available from Copperweld Steel Company.

These tables provide information on sags and tensions for span lengths of from 40 feet to 220 feet and the approximate sizes of strand for heavy loading district with the maximum tension not over 50 percent of rated messenger strength and normal tension not exceeding 35 percent of the messenger strength. For Copperweld messenger spans of up to 400 feet, information on sags and tensions are

Build your revenue with a co

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Here is the standard model which gives your customers the simplest, most effective 24 hour answering service available. *It answers the telephone, takes and holds calls when other lines are busy, records name, number and message, and tells the caller to call another number*—a complete secretarial service, a wonderful source of revenue for the telephone company.

And with the new services now available in the complete Electronic Secretary line, you can offer your customers *a service tailored exactly to fit their own particular requirements.*

The standard Electronic Secretary, Model DCR-1, can also be ordered with: Headphone connection for private playback; automatic erasing and rewind; and automatic stop switch for recording spools to stop wire from running off spools.

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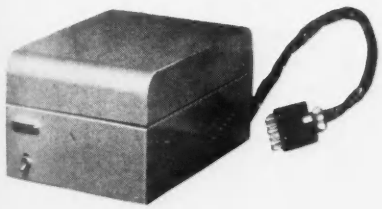
complete line of telephone answering and recording devices

ELECTRONIC SECRETARY LINE



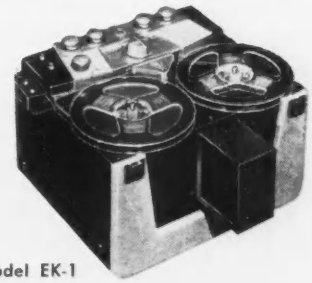
Remote Call-Back

An accessory to the standard Model DCR-1. When this unit is tied into the Electronic Secretary, it is possible to call the number being answered by the Electronic Secretary and get a playback of all the incoming messages. No need for return to home or office.

Model T-R

Automatic Answering

A self-contained Electronic unit designed for automatic answering and delivering a predetermined recorded message. It incorporates a 45 r.p.m. record which carries any desired message. Message can be changed by cutting a new record. Ideal for service businesses, doctors, lawyers, churches, etc.



Model EK-1

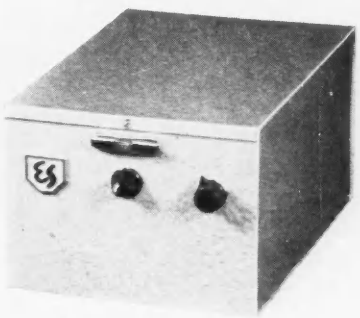
Monitoring

For special adaptation for the exclusive use of operating telephone companies this model features a tape recorder for monitoring messages. Completely automatic mechanism facilities both forward and rewind operations. Model EK-1 is best suited for complaint and service departments, and telephone operator voice training.

Model T-T

Variable Message Answering

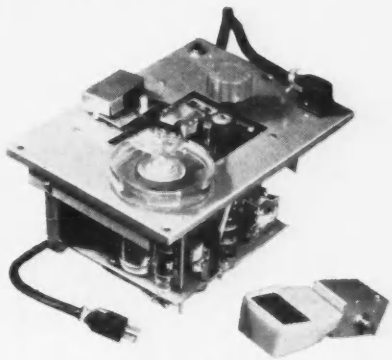
This unit performs the same function as Model T-R above, except the message can be changed as frequently as desired. Old message is automatically erased as new message is recorded. Especially designed for brokers, theaters, etc., where messages must be changed frequently.



Model SW

Answering Two Lines

This device is an accessory to the standard Electronic Secretary, Model DCR-1. It is designed to offer the convenience of answering two separate telephone lines.



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Size Designation	Nominal Dia. (Inch) †	BREAKING LOAD* (Lbs.)			WEIGHT		CROSS-SECTION		Size Designation
		High Strength		Extra High Strength 30% Cond.	Lbs. Per 1000 Ft.	Lbs. Per Mile	Cir. Mils	Sq. In.	
		40% Cond.	30% Cond.						
9/16 (7 No. 5)	.546	18,510	20,470	24,650	649.4	3,429	231,700	.1820	9/16 (7 No. 5)
1/2 (7 No. 6)	.486	15,330	16,890	20,460	515.0	2,719	183,800	.1443	1/2 (7 No. 6)
7/16 (7 No. 7)	.433	12,670	13,910	16,890	408.4	2,157	145,700	.1145	7/16 (7 No. 7)
3/8 (7 No. 8)	.385	10,460	11,440	13,890	323.9	1,710	115,600	.09077	3/8 (7 No. 8)
11/32 (7 No. 9)	.343	8,616	9,393	11,280	256.9	1,356	91,650	.07198	11/32 (7 No. 9)
5/16 (7 No. 10)	.306	7,121	7,758	9,196	203.7	1,076	72,680	.05708	5/16 (7 No. 10)
3 No. 6	.349	6,934	7,639	9,754	220.3	1,163	78,750	.06185	3 No. 6
3 No. 7	.311	5,732	6,291	7,922	174.7	922.4	62,450	.04905	3 No. 7
3 No. 8	.277	4,730	5,174	6,282	138.5	731.5	49,530	.03890	3 No. 8

Modulus of Elasticity: Strand, 23,000,000. Coefficient of linear expansion: .000,007,2 per degree Fahr. † Diameter of circumscribing circle. *Breaking load of 7-wire strand is taken as 90% of the sum of the breaking loads of the individual wires; breaking load of 3-wire strand is taken as 95% of the sum of the breaking loads of the individual wires; these strengths are the same as for 30% conductivity Copperweld strands.

TABLE XLV.

contained in bulletin E.D. 1862 obtainable from the same company.

The calculations of messenger tensions and sags resulting from the cable lashed to it provides complicated equations. However, the use of sag and tension charts will simplify the mathematical work. The book on "Sag Calculations by Use of Martin's Tables" by James S. Martin, published by the Copperweld Steel Company contains sag, span length, and stretch factors which are employed in conjunction with a special calculating form to determine the tensions and sags under different loading conditions.*

In calculating sags and tensions for a cable installation the usual procedure is to assume that the messenger is initially strung to a given tension on a section of line, deadended and fastened at the intermediate poles, after which the cable is pulled in and lashed to the messenger. With the stringing tension of the messenger as the starting point, the calculations are made as in the case of an overhead conductor. The weight of the cable is assumed to be an additional dead load, and the tension in the messenger can be figured with this additional load (less ice and wind loadings). The maximum sag and tension of the messenger with ice and wind loadings are then computed as a final step.

It should be noted that the tension at normal loading is often more important from a design standpoint than the tension at maximum loadings. With heavy cables, ice and wind loading adds very little to the total weight supported by the messenger. As pointed out in a previous section, the load resulting from a cable splicer and a splicing platform on the messenger or a man riding a cable car on the messenger will have a greater loading effect on a cable span than ice and wind loading.

It should be noted that Copperweld messenger strand may conveniently use galvanized hardware in supporting the strand, even though galvanic action may take place between the zinc covering of the hardware and the copper jacket of the strand wires. This results in a grey discoloration on the copper at the points of contact. However, the Copperweld strand is not affected and the zinc coating on the hardware is too thick to be penetrated by the surface deterioration. Copperweld lashing wire is employed in lashing cable to a Copperweld messenger to prevent galvanic action on the wire wrapped around the messenger cable.

**The values in Martin's Tables are derived from the equations of the catenary curve. To adapt the tables for calculation sags and tensions of telephone messenger and cable, the following information is required:*

Modulus of elasticity for cable messenger.

Dead weight (without ice) — weight of messenger plus weight of cable.

Vertical load (with ice only) — In calculating the ice load, the radial thickness of ice (½-inch for heavy and ¼-inch for medium loading) is assumed as being applied on the circumscribing circle the diameter of which is equal to the diameter of the cable plus that of the messenger. Thus, if the diameter of the messenger is ¼ inch, and of the cable, ¾ inch, the radial thickness of ice is figured on an overall diameter of 1 inch. The weight of the ice is based on a density of 57 pounds per cubic foot.

Wind load — The transverse wind load is based on the projected area of the overall diameter of messenger and cable plus twice the radial thickness of ice.

Resultant load — This is calculated from the values of the vertical of the dead weight with ice and the transverse wind load on the iced assembly. Since it is in the plane of the resultant, it is calculated by taking the square root of the sum of squares of the two loading values.

Methods of Measuring Tension in Cable Messenger

THE ACCURATE measurement of tensions in a cable messenger is highly important. For this reason, it is considered more satisfactory to employ a dynamometer to determine the tension rather than to attempt to measure the sag of the messenger. Stringing sags of the messenger, before the cable is lashed to it, are

usually too small to be accurately measured.

Either traction or shunt type dynamometer (illustrated in *Figure* 263) is simple to use but must be set for the size of messenger strand being checked and requires careful calibration at intervals to maintain its accuracy.

The shunt type dynamometer is hung on the messenger near a pole or other convenient point of access to the messenger. The cam lever is operated to force a plunger against the messenger, pushing the latter out of line. This action sets up a deflecting force on the upper arm of the dynamometer, which operates the indicator plunger. The indicator registers the deflecting force on a dial which is marked in points. This reading is converted to pounds of tension by reference to the calibration chart. It is important to set the cam lever properly for the size of the strand being checked; otherwise, the reading will be in error.

The traction type dynamometer (*Figure* 264) is employed in tandem with the messenger strand. One end

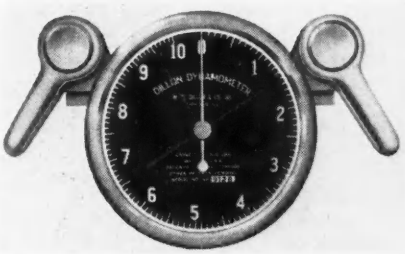


FIG. 264: — Traction type dynamometer designed to measure the tension in the messenger by placing it in series with strand connection and pulling device.

of the dynamometer is attached to the messenger with a strand grip, and the other end to a ratchet hoist fastened to the pole, as shown in *Figure* 265.

In using the dynamometer, the proper tension values are obtained from tables of tensions for the kind and sizes of messenger strand. Readings are taken at selected points along the lead, depending on the number of spans involved. In general, in straight sections of the lead where there are less than ten spans, the dynamometer is positioned on the messenger at the mid-point of the straight section. In a straight lead of

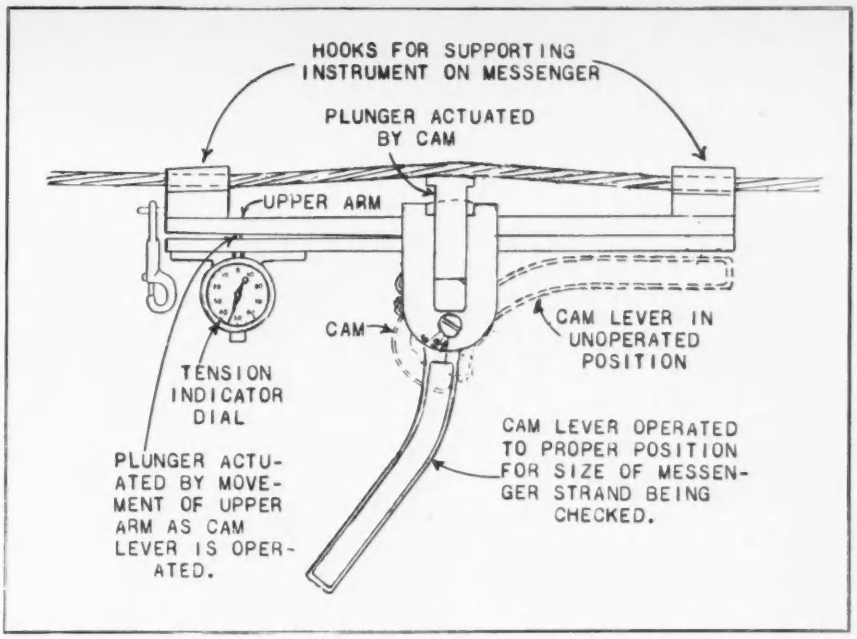

HOOKS FOR SUPPORTING INSTRUMENT ON MESSENGER
PLUNGER ACTUATED BY CAM
UPPER ARM
CAM
CAM LEVER IN UNOPERATED POSITION
TENSION INDICATOR DIAL
CAM LEVER OPERATED TO PROPER POSITION FOR SIZE OF MESSENGER STRAND BEING CHECKED.
PLUNGER ACTUATED BY MOVEMENT OF UPPER ARM AS CAM LEVER IS OPERATED.

FIG. 263: — Shunt type dynamometer which measures the tension in the messenger by deflecting the strand with a cam lever and plunger arrangement.

FIG. 265: — Traction type dynamometer in use. When ratchet hoist is operated to the point where the strand between attachments begins to bow, the dynamometer will register full tension in the messenger.

ten to twenty spans, the dynamometer is located at each one-third interval along the section to obtain the tension reading at each interval. For longer leads, one-quarter intervals are employed.

Where corners or grade changes occur in the lead, a reading is taken at each corner and grade change point.

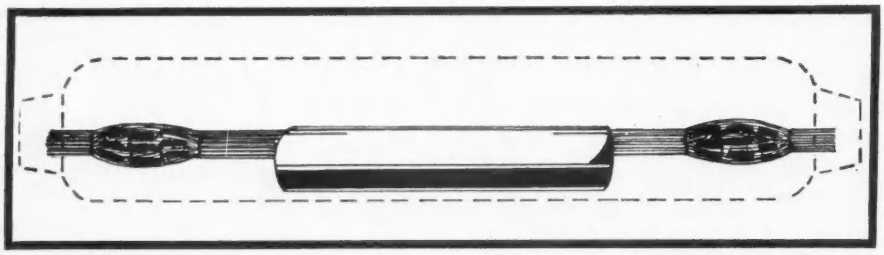
It is important that the messenger be free to move as the tension is applied at the pulling end. The suspension clamp at each pole should be loosened just sufficiently to enable this free movement. As soon as the proper tension is obtained at each test interval, all suspension clamps in that portion are tightened before going to the next test point, beginning at the far end and progressing back to the pulling point.

If a shunt type dynamometer is employed, it is desirable that the messenger be pulled to partially normal tension before attaching the instru-

CEECO LOADING COILS

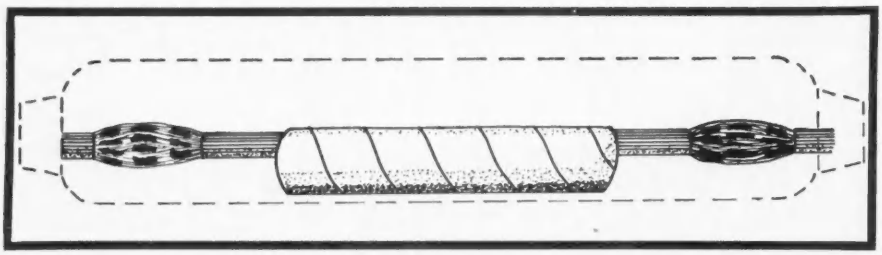
Units for Splicing Mounting

These assemblies are supplied on a wooden dowel, sometimes called sleeve mounted for use in the cable splice.



TYPE 162 FOR MOUNTING IN PLASTIC CABLE SPLICE

Type 162 assemblies can be supplied containing from one to 16 coils of either Type 632(88MH) or Type 638(44MH) and are for use in plastic cable splice. Types MF10, MF11, 641 and 642 coils can be furnished for inter office and toll entrance cables.



TYPE 167 FOR MOUNTING IN LEAD CABLE SPLICE

Type 167 assemblies can be supplied containing from one to 16 coils of either Type 632(88MH) or Type 638(44MH) coils and are for use in lead cable splice. Types MF10, MF11, 641 and 642 coils can be furnished for inter office and toll entrance cables.

CEECO assemblies give "Life like" voice transmission and reception to your long cable and rural distribution wire circuits. "Life like" telephone transmission is a clear, easily understandable telephone conversation over the necessary frequencies present in the voice to be heard via the telephone in the same volume as in "face to face" conversation. Telephone companies providing such quality service will increase subscribers desire to use "LONG DISTANCE" more often, thus increasing revenue.

Write us for assistance on your loading problems. CEECO loading coils are sold by your telephone equipment supplier.

COMMUNICATION EQUIPMENT & ENGINEERING COMPANY
5646 West Race Avenue • Chicago 44, Illinois
Phone EStebrook 8-3109

ment to the strand. Movement of the messenger as the latter is stressed may cause the dynamometer to get away from the man taking the reading or to hit the suspension clamp on the pole.

When the strand is prestressed, that is, pulled to slightly higher than normal tension, the dynamometer may be attached to the messenger about the time the strand is estimated to be at the prestressing tension. The instrument will then indicate the tension as the messenger is slacked off to normal and there will be no problem with undue movement of the instrument.

In using the tension tables for determining the proper tension of the messenger strand, the proper tension value should be selected for the nearest air temperature as measured by a reliable thermometer. The thermometer should be exposed in the shade or sunshine according to the amount of messenger exposed to direct sunlight or shaded by trees along the lead.

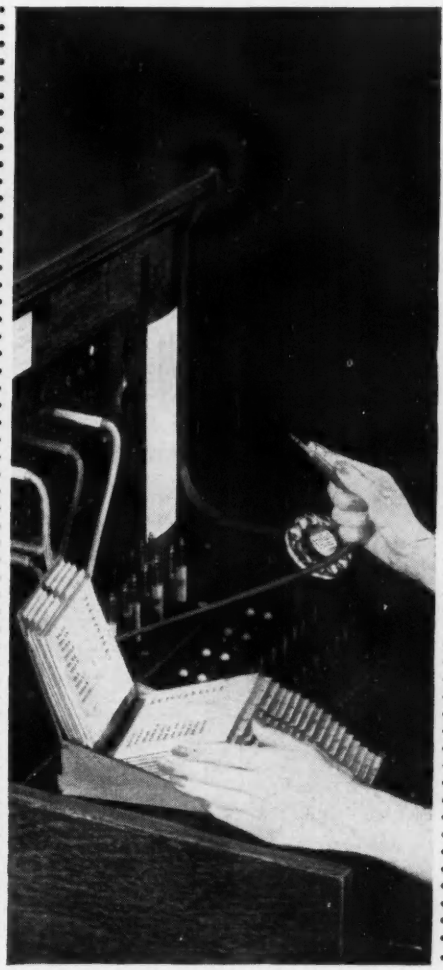
The size of dynamometer to employ is determined by the maximum tension expected to be measured. Where it is expected to measure the tension of messenger with cable on it, the dynamometer should have a maximum capacity of 10,000 pounds. If the instrument is to be used exclusively for determining messenger tension alone, one with maximum capacity of 5,000 pounds will be adequate for the purpose—*To Be Continued.*

Transposition Brackets

A NEW brochure, now available from Transandean Associates, Inc., gives complete information on its' line of CASE aluminum transposition brackets for carrier-circuit construction, plus the specially designed glass and rubber insulators. In addition, the new brochure gives full instructions and diagrams on the recommended method of installing the CASE span brackets . . . . assembly and installation of the CASE crossarm-type bracket, and a typical installation (straight line construction).

To obtain your copy write Readers' Service, TE&M, 7720 N. Sheridan Road, Chicago 26, Ill.

Keep Important Information at their Finger Tips...ALWAYS



LINEDEX®

Speed up reference time and improve service by placing a wealth of data right at your operator's finger tips with **Linedex** Rotary Visible equipment. These compact, flexible "read-at-a-glance" units are ideal for applications where a large volume of listings is handled as in the case of information boards, intercepting boards, and test boards. They also provide speedy reference for the efficient handling of trouble calls.

All pertinent information is listed on convenient visible inserts which can be removed, replaced or rearranged with a minimum of effort. Color signals can be used with **Linedex** to show line out of order, grounded, suspended for nonpayment or other information.

SPEEDAC CHAINDEX®

Operation of your PBX installation can be immeasurably improved by making available to your subscribers Remington Rand **Speedac Chaindex** Reference Units. These exclusive KEY SHELF DIRECTORY UNITS for telephone numbers and extensions are specifically designed to speed subscribers' service and ease the operator's duties.

With **Speedac Chaindex**, fast reference to any of 1040 lines of information is made with a flip of the pocket. Removal or replacement of information can be made instantly without disturbing the order of the other lines. **Chaindex** cards feed into typewriters or addressing machines easily. **Speedac Chaindex** is compact — 5½ x 10¼ inches.

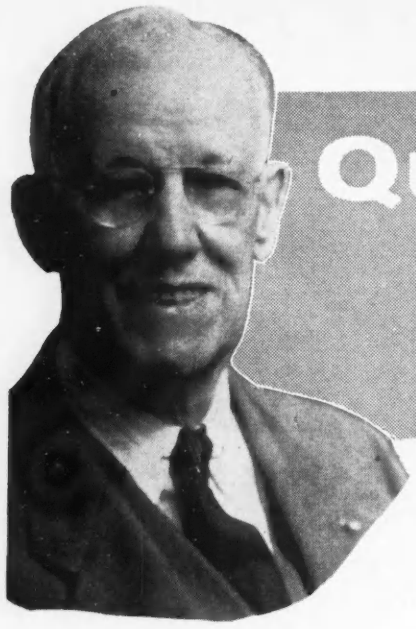
SPEEDAC® Multi-Card

Long distance calls are handled with greater speed and accuracy...lost time due to trunking to another information source is eliminated . . . and rate and route information is instantly available to operators handling long line switchboards, thanks to **Speedac** Multi-Card. This compact Bulletin Holder Unit makes these things possible by completely listing day and night rates for both person to person and station to station calls...route information...toll centers and other frequently called points. A flip of a pocket is all that is necessary for speedy reference and with Multi-Card changes can be made quickly when information revisions are necessary.

For further information on these fine products send for free folders KD767 and KD734.
Write to Room 1179, Remington Rand, 315 Fourth Avenue, New York 10, New York.

Remington Rand

DIVISION OF SPERRY RAND CORPORATION



Questions and ANSWERS

Conducted by Jay G. Mitchell

After a long absence from TELEPHONE ENGINEER & MANAGEMENT we're glad to extend a hearty welcome to Mr. Mitchell and his popular "Questions and Answers" department. In this first section of his new series, Mr. Mitchell discusses — (1) The Megger — A useful device for measuring high resistance; and (2) a very satisfactory communication.

The "Megger"

QUESTION: — An inquiry has been received, directed to our wire-chief, requesting an explanation of the testing device called a "Megger" which appears to have some advantages over the more usually encountered types of equipment, especially in the measurement of high resistances. This device is apparently useful in some types of testing where easy portability and simplicity of operation are important. Stamped and directed envelope for your direct reply is enclosed.

ANSWER: — The principle involved in the "Megger" is shown schematically in *Figure One*. It is to be understood that only the *basic principles* of operation are set out in this schematic circuit. Many components, which are essential for the effective use of the "Megger" are not, although essential in practice, shown in order to render the explanation of the basic principles involved readily understood.

A hand generator equipped with a commutator and having a *direct current* output, which is identified in the cut by the letters D. C. is the source of the testing voltage. This is customarily operated by hand and thus obviates the necessity of providing an adequate battery or other source of direct current of sufficiently high voltage.

A powerful permanent magnet provides, as shown, a strong magnetic field between its poles. In this strong magnetic field, as shown, there are mounted two exactly similar coils of fine wire attached together and mounted on a pivot bearing *as a unit* so that they both swing in the strong magnetic field of the permanent magnet while the magnetic lines of force pass through *both coils* at right angle to the pivot axis on which they are mounted as one mechanical unit.

It must be noted that one terminal of the direct current generator, D. C., is connected to both of the two individual coils which are mounted on a pivot as one unit mechanically at right angles to each other in the strong magnetic field supplied by the permanent magnet.

In the illustration the resistance marked "C" is a known resistance and is a part of the "Megger" while the unknown resistance to be measured is represented by "X" and may, of course, be a conductor in a telephone cable which is showing low insulation, a "ground" connection, a transformer winding's insulation or any similar normally high resistance which, for any reason, is subject to doubt as to its value.

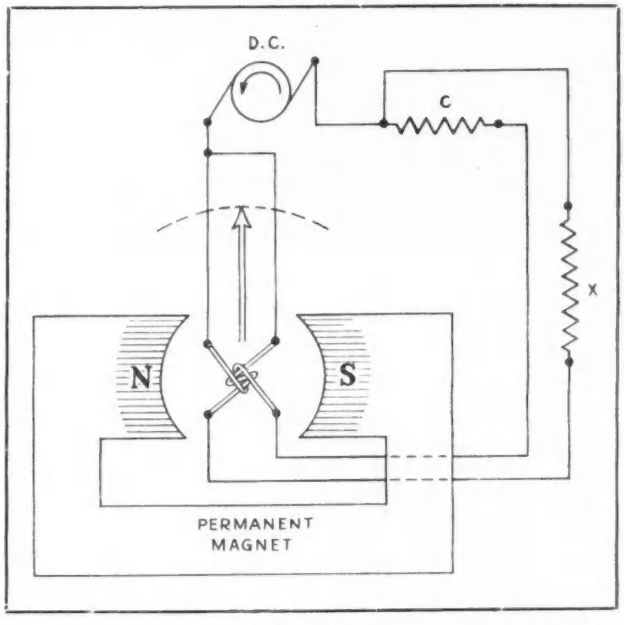


FIG. ONE.

Now the two coils which are mounted as a unit on a pivoted bearing in the strong magnetic field maintained by the permanent magnet are so connected that current from the direct current generator, D. C., *must* pass around them through their windings *in opposite directions*. In case the strength of the direct current from the generator, D. C., through each one of the coils mounted

on the same pivoted bearing is equal, then the turning moment of one will be exactly canceled by the opposing turning moment of the other in the strong magnetic field of the permanent magnet and the instrument pointer, which is attached to the two coil unit on the pivoted bearing, will take its position in the middle of its scale.

This is the condition, of course, when the unknown external resistance "X" is precisely equal to the known resistance "C", which is a part of the instrument, and the position where the pointer comes to rest on its scale will be calibrated with the value of the known resistance "C."

This is because the strength of the current flowing from the direct current generator, D. C., through each the known resistance "C" and the unknown resistance "X" is fixed, in each of the two pivoted coils, by the known resistance "C" and the unknown resistance "X" and the resulting rotation as a unit of the two pivoted coils, *and therefore of the attached pointer* affords the basis for the calibration of the instrument for the basis of a direct reading scale under the tip of the pointer.

It is worthy of note that the moving element merely floats in the strong magnetic field and no retractile springs are included since the entire pivoted movement must be free to assume any angular position. If the unknown resistance "X" is an *open circuit* it is obvious that only one of the two pivoted coils, the one attached to the known, "C," will carry any current and the pointer will be swung to the extreme limit of its travel, indicating an open circuit for "X."

"*A Satisfactory Communication*"

QUESTION: — In a recent informal local conference with several executives of near-by telephone companies some things of strictly local importance were discussed at what we believe may prove to be an important and profitable meeting. The general exchange of ideas at the luncheon afterward was interesting and will, we believe, result in much better company interrelations in the future.

The discussion included some remarks by the manager of the larger host company and included, of course, the subject of intercompany toll service. Both toll revenue and toll service proved to be of general interest. In the matter of toll service we found that we had a somewhat better understanding of transmission difficulties and their remedy as one result of many practical hints published in "*Telephone Engineer & Management.*" This included an improved understanding of telephone transmission and the causes of many transmission defects and their remedies.

It was clearly brought out, for instance, that the recent series on "*The Decibel Calibration*" was exactly that and was not an effort to set out an exhaustive explanation of the methods of measuring all the quantities involved in the subject of transmission.

As the title clearly states this material is an effort to explain the basis of the "calibration" in decibels of the many electrical measuring instruments that are so useful in the telephone industry. We are very glad to

TELEPHONE ODDITIES BY HIGGINS
IN THE NEAR FUTURE - ACCORDING TO THE ELECTRICAL SECTION OF THE ASSN. OF AMERICAN RAILROADS - YOU'LL BE COUNTING FIBER-GLASS TELEPHONE POLES WHEN YOU TAKE A LONG DULL TRAIN RIDE -- A COMMITTEE WHICH MADE A STUDY OF THE POSSIBILITIES OF THE NEW TYPE POLE SAID ITS HOLDING STRENGTH IS ABOUT 100,000 POUNDS PER SQUARE INCH -- ITS WEIGHT IS ABOUT ONE-FIFTH THAT OF SOUTHERN PINE POLES -- ITS HIGH STRENGTH AND RESISTANCE TO IMPACT WILL FACILITATE CONSTRUCTION; PARTICULARLY IN MORE INACCESSIBLE AREAS
WHAT DO YOU MEAN - YOU CAN'T FIND THE POLE - IT'S RIGHT HERE WHERE WE LEFT IT YESTERDAY!
DID YOU KNOW THAT ARCHERY IS BEING USED BY SOME TELEPHONE COMPANIES TO STRING LINES?
- IN DIFFICULT TERRAIN SPOOLS OF CORD ARE SHOT WITH BOW AND ARROW FROM POLE TO POLE
TOM HIGGINS JR + RUTH
PROFESSOR DIAL'S QUIZ -
WHAT CITY IN THE U.S. HAS THE LARGEST TELEPHONE EXCHANGE BUILDING UNDER ONE ROOF?
ANSWER: DENVER - ACCORDING TO THE MOUNTAIN STATES TELEPHONE & TELEGRAPH CO.

let you know that we have profited very much from this series. Incidentally it may be of interest to you to know that we wrote you some months ago on another matter directing the letter to your Evanston address but we have never received your reply. Probably this letter was lost.

ANSWER: — This is very much appreciated. The series on "*The Decibel Calibration*" was prepared with the sole objective of presenting a basic concept in simple terms of the title (not an exhaustive explanation of the entire theory of telephone transmission) that would be of help to those responsible for the continued satisfactory operation of communication equipment. There are several power reference levels in common use in the telephone and radio fields and *direct reading* Decibel meters, calibrated to almost any of these power reference levels are being offered by electrical instrument manufacturers.

In the purchase of a Decibel meter the power reference level to which it must be calibrated must, of course, be clearly specified. With the suitable meter equipment and a working knowledge of the underlying principles many other wise difficult problem conditions may be analysed and the remedy may be prescribed.

The intention was *not* to set out an exhaustive treatise of methods of evaluating the transmission effectiveness of communication plant or equipment but, rather, to explain some of the basic principles with clearness so that they might be usefully applied in everyday operation.

My personal address has been, for about three years, Post Office Box 215, Red Bank, N. J., and mail directed to me at that address will be forwarded if necessary. My personal thanks for your letter. —*Jay G. Mitchell.*

WHY

AN END TO
"OFF-HOOK" TROUBLES

LIFELIKE
TRANSMISSION

MODERN
FUNCTIONAL DESIGN

EASY, ACCURATE
DIALING

SIMPLIFIED
INSTALLATION

COLORS AND
TWO-TONES

TIME-SAVING
MAINTENANCE

DAYDREAM?

You can get all these features with Automatic's Type 80 Telephone!

Maybe you're still looking for *the* telephone that has *all* the features you want. If so, stop! Automatic's Type 80 Telephone is just what you've been looking for. Want proof? Then read—*slowly please*—the eye-opening points that follow (and note those *exclusive* features):

Automatic's Type 80 Telephone in new Forget-me-not Blue

- **LIFELIKE TRANSMISSION.** Excellent clarity, even on long lines—increases toll calls and toll revenue.
- **NO COSTLY "OFF-HOOK" TROUBLES.** Our "walking handset" (*exclusive feature*) toddles right into the cradle.
- **MODERN, FUNCTIONAL DESIGN.** Have a long look at the illustration and judge for yourself.
- **SIMPLIFIED INSTALLATION.** Time-saving "Installer's Hooklock" (*another exclusive*) keeps hook down—leaves both hands free to work on the telephone.
- **EASIER READING, ACCURATE DIALING.** New slanted dial, extended number plate and guiding arrowheads.
- **LOWER MAINTENANCE COSTS.** All Type 80 components can be removed quickly with just a screwdriver. And all units are equally accessible as well.
- **COLORS.** Build "2nd" telephone sales with Colonial Blue, Sunlight Yellow, Turquoise, Classic Ivory, Garnet Red, Sand Beige, Dawn Gray, Jade Green, Forget-Me-Not Blue, Camellia Pink and Gardenia White.

Want further proof? Then talk to any telephone man who has standardized on Type 80's. There are a lot of them...and they're the best boosters we have (followed closely by their subscribers). Next step is to send in your order. Address: *Automatic Electric Sales Corporation, Northlake, Illinois. Or call Fillmore 5-7111.*

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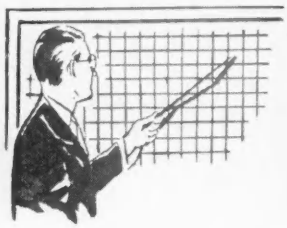
A member of the General Telephone System—One of America's great communications systems

GENERAL SYSTEM



telephone ASSOCIATION activities

Florida Independents Meet

Florida Convention Speakers Emphasize Need For Financially Sound Industry

SPEAKERS at the 50th Anniversary Convention of the Florida Telephone Association pointed to five main problems as subjects deserving the attention of the Independent telephone industry: — (1) the need for long-range planning; (2) the inequity of excise taxes; (3) earnings; (4) the competitive market; and (5) the need to be "on guard" against "those who would take the telephone industry's job away from us . . ."

Over 350 Florida Independents and 45 exhibitors attended the two-day meeting, December 2-3, 1957, at the Balmoral in Miami Beach and heard addresses by J. G. Bradbury, executive vice president, Southern Bell Telephone & Telegraph Co., Atlanta, Ga.; W. J. Clapp, president, Florida Power Corp., St. Petersburg; Carl D. Brorein, president, Peninsular Telephone Co., Tampa; and Donald C. Power, president, General Telephone Corp., New York City.

Two departmental conferences highlighted convention activities on December 3. Eugene L. Williams, Jr., district traffic superintendent, Peninsular Telephone Co., St. Petersburg, presided at the Traffic Conference which featured discussions of "Direct Distance Dialing" and panel discussion of "Effective Delegation of Authority."

Ernest M. Menendex, division commercial manager, Southeastern Telephone Co., Tallahassee, Fla., presided at the Commercial-Plant Conference and presented speakers: Carl W. Carlson, commercial engineer, Winter Park (Fla.) Telephone Co.; Frank C. Laver, equipment engineer, Peninsular Telephone Co., Tampa; Fred S. McGehee, West Florida Telephone & Telegraph Co., Marianna; and J. W. Alfred, Florida connecting company manager, Southern Bell Telephone & Telegraph Co., Jacksonville.

The executive vice president of Southern Bell, J. G. Bradbury, addressing the general session on December 2, emphasized that because the service telephone companies furnish "is essential to the progress and welfare" of the territory in which they operate, and well-run public utilities contribute largely to the growth and economy of any area, it is important that recognition be given to the need to keep these companies financially sound.

Pointing out that "only financially strong companies can raise money at reasonable cost," Mr. Bradbury reported that in 1956 the leading manufacturing companies in the United States earned 12½ percent on their investment capital, while telephone companies in the Southern Bell area earned only about one-half that amount.

"This is the record at a time public utilities were being called on to raise

Members of this Florida convention group are (l. to r.): WILLIAM J. CLAPP, J. G. BRADBURY, M. N. DREW, and CARL D. BROREIN.

enormous amounts of new money that was needed to expand and improve their service in order to meet public demands," he declared.

"While today there is as much or more money than ever before, it must be remembered that money seeks the highest yield consistent with financial safety and that if we are to seek the investors' dollar in a highly competitive money market, our earnings must be good and our companies must be financially strong," Mr. Bradbury stated.

The Southern Bell official, in a discussion of the "job ahead" for the telephone industry in the Southern States, declared that "in no other business is long range planning more essential to successful operation than in the telephone business."

The president of General Telephone Corp., Donald C. Power, told the Florida Independents the telephone industry looks upon the excise taxes on telephone services as "indefensible and we are going to fight to get rid of this inequity."

He warned that because of "the troubled times through which we are passing, we are bound to feel increased pressure for taxing all kinds of business operations. Unfortunately, this comes at the very time when we had hoped to do something about removing the unfair and discriminatory excise tax of 10 percent."

Also stressing the importance of adequate earnings, Peninsular Telephone Co. President Carl Brorein, said that "A strong company with good earnings is necessary to provide the proper kind of (telephone) service. Only then can it expand its services promptly to meet the demand. Only then can it improve its facilities to provide the latest and best quality of service . . . A telephone company with good earnings can undertake projects which will, in the long run, result in better service at lower cost, even though they may in the beginning put pressure on earnings because of high first cost."

Brorein also declared the telephone industry must constantly be "on — guard" to see "that its outer limits are expanded in proportion to technical improvement. Don't let anybody take the telephone industry's job away from us — even the smallest part of that job . . ."

Florida Association officers (l. to r.): Pres., J. L. SHARIT; Sec.-Treas., JOSEPHINE POPPLETON; 1st V. P., FRED S. McGEHEE; 2nd V. P., E. M. MENENDEZ.

"There are some people today," Brorein said, "who are probably sincere and justified in their own minds, who feel, for example, that the telephone industry as such should be ousted or barred from participating in certain forms of mobile radiotelephone. There are those who think that the telephone companies should be kept out, or limited, with respect to the use of certain microwave frequencies."

The Peninsular Telephone Co. executive said "we must never consider or concede the proposition that there may be forms of two-way voice communication, conducted as a public business, which does not belong to the telephone industry! This is an expanding concept. It should be and it must be an expanding concept.

"As radio and microwave and other techniques, some perhaps not even in existence at the present time, become available, it is our right and our duty, as custodian of a great industry, to use these new instruments. They become a proper part of fulfilling our public service obligation. Our use of them must not be restricted."

Mr. Brorein added that "while we may agree that there are special situations involving two-way voice communications which need not be conducted by the telephone industry, we should never agree that the telephone industry itself should be prevented or hedged about with restrictions in entering upon and performing similar services. We might well agree, for example, that airlines, the military, the police and other public authorities, might have to conduct their own communications systems under their own control for operational purposes.

"But I believe even these services will find in time that they are able to meet their service requirements more effectively, efficiently and economically under the operation and with the facilities of those who are charged with the responsibility of rendering such service as a public duty, the telephone companies. We cannot be too watchful of artificial restrictions which strictly commercial enterprises might try to raise against us."

Officers elected by the association are: President, J. L. Sharit, Port St. Joe; 1st Vice Pres., Marianna; 2nd Vice Pres., E. M. Menendez, Tallahassee; and Secretary-Treasurer, Josephine Poppleton, Tampa.

Directors are M. L. Barre, Jacksonville; H. A. Bishop, Starke; P. E. Brannen, Ft. Myers; Carl D. Brorein, Tampa; Carl D. Brorein, Jr., Tampa; W. A. Brown, Tampa; Mrs. Allene M. Drew Cantey, Quincy; E. L. Cox, Perry; M. N. Drew, Quincy; B. A. Galloway, Winter Park; J. K. Galloway, Winter Park; J. N. Johnson, Ft. Myers; Ralph Maner, (Representing Manufacturers) Tampa; Fred S. McGehee, Marianna; E. M.

Please turn to page 54

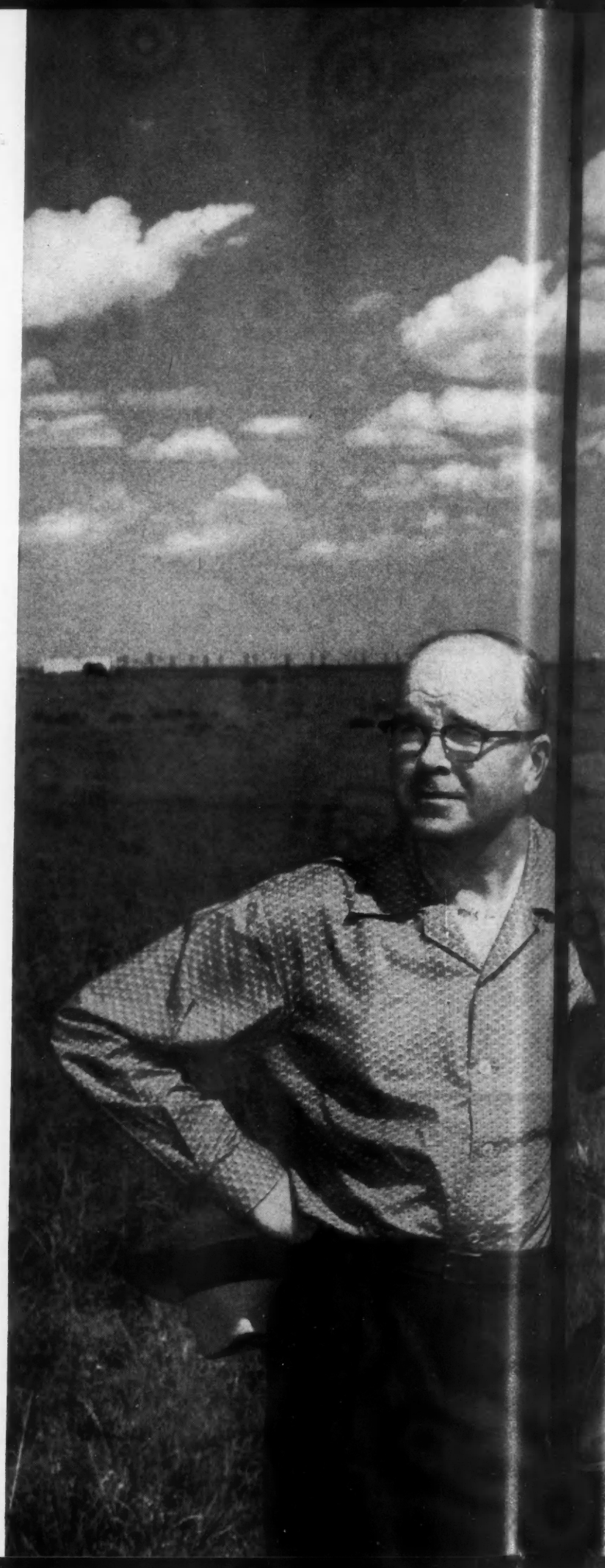
Rural telephone service means working together

Good rural service is the result of telephone companies working together, and telephone people working with their customers.

It's important that farm families understand how this co-operation is producing better and more valuable telephone service for them.

That's a job that advertising can help with. A series of Bell advertisements addressed to farm families about their telephone service is running in eleven nationally circulated magazines reaching farmers.

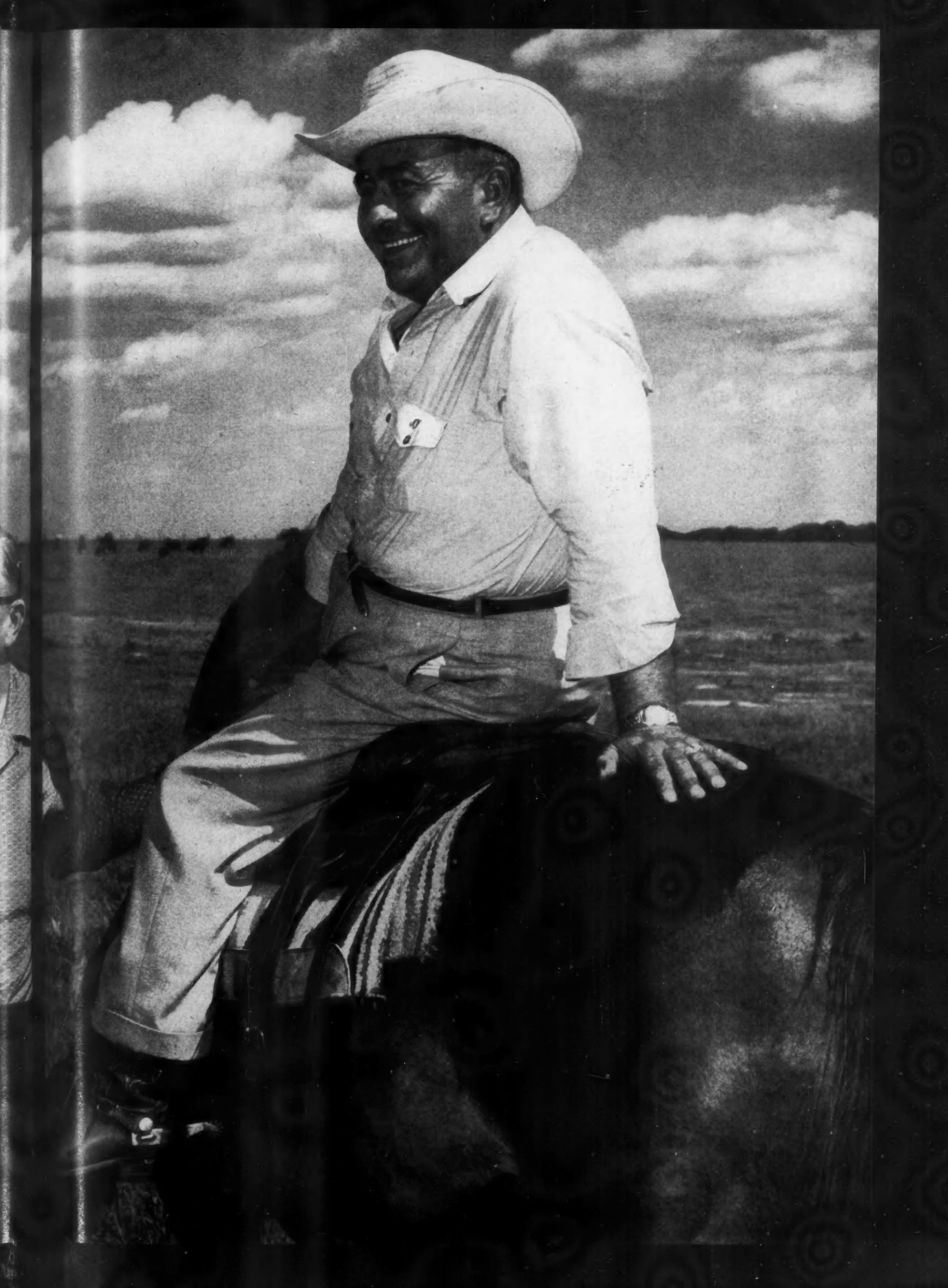
This advertising gives people in rural communities a picture of what is being done for their telephone service, and their telephone neighbors who are doing it.



Joe Tucker (right), Oklahoma cowman, talks over his service with Dick Hildebrand, District Manager in Bartlesville, Okla.

Working together to bring people together

BELL TELEPHONE SYSTEM



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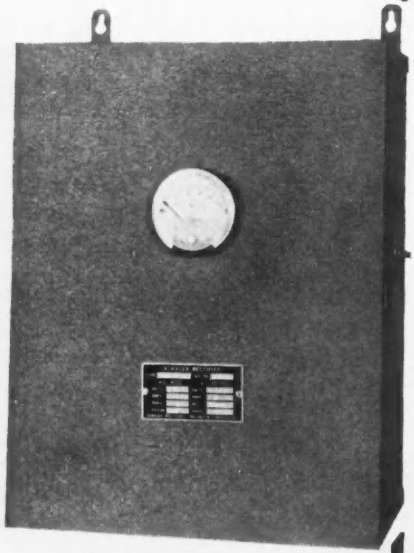
for Years-
and Years-
and Years-
of Service!



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See your Schauer Jobber.
Write for Bulletin 4516.

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(Concluded from page 51)

Menendez, Tallahassee; Josephine Poppleton, Tampa; J. L. Sharit, Port St. Joe; R. W. Shriner, Tampa; Blair C. Stone, Tallahassee; Max Wettstein, Ocala; Otto Wettstein, III, Live Oak; C. J. Yates, Jacksonville; Hugh C. Macfarlane, Attorney.

Independents Meet at Oklahoma City

Oklahoma Independents Hold 22nd Annual Convention

MEETING at the Huskins Hotel, Oklahoma City, November 21, 22, members of the Oklahoma Telephone Association looked at their 1957 accomplishments and decided that although Oklahoma telephone people are not building any earth satellites, they are "busy building satellite dial offices . . ."

Oklahoma Association President A. L. McFadden emphasized this fact at the opening convention session. Presenting his annual report he said, satellite dial offices are "going in so rapidly it is difficult to keep up with them."

"There are also numerous dial conversions taking place in toll center offices that will continue to maintain attended toll positions," he added. "We are just bursting out at the seams in growth and improvements but even so, there is still much work to do."

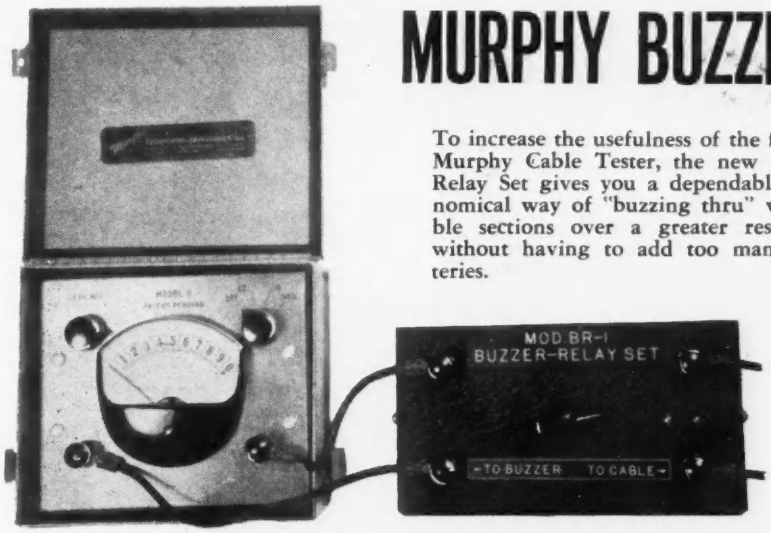
Mr. McFadden reported the total number of operating telephone companies in Oklahoma continues to decrease "but this is a healthy development as it is brought about by acquisitions which eliminate many small single exchanges under one management."

"The Independent segment of the telephone industry in Oklahoma suffered a loss in telephones this year when the Southwestern States Telephone Company traded 16 of its Oklahoma exchanges to the Southwestern Bell Telephone Company for some other properties in Texas," he said. "However, this loss is rapidly being recovered by growth in other

The head table at Ladies Luncheon at Oklahoma Telephone Convention L. to R. MISS DENA LEE JONES Oklahoma City, entertainer; MRS. W. K. AUBREY, Jay; MRS. JOE TROWER, Mannford; MRS. FORREST HAND, Beggs; and MRS. O. H. MULLEN, Inola.

Now you can *buzz through* wet cable sections and not have to test from field and office ends.

MURPHY BUZZER RELAY SET (BR-1)



To increase the usefulness of the famous Murphy Cable Tester, the new Buzzer Relay Set gives you a dependable, economical way of "buzzing thru" wet cable sections over a greater resistance without having to add too many batteries.

The BR-1 will buzz thru a loop resistance of 0 to 1000 ohms. Only one 4½ volt battery is used in the set and it is enclosed in a cabinet with a special "balanced armature" relay. Dimensions of the Murphy Buzzer Relay Set are 3½ x 6 x 3 inches. It is shipped complete with a pair of water proof cords for connecting to the Murphy Cable Tester, and a heavy duty 4½ volt battery.

Write for prices and additional information.

Order your new Model VC Test Cords for use with Murphy Cable Tester. Made of high quality, extremely flexible, test wire, they're insulation tested at 20,000 volts . . . assure no "leakage" readings.

ELECTRONIC RESEARCH DEVELOPMENT MANUFACTURE

MURPHY ENGINEERING LABORATORIES, Inc.

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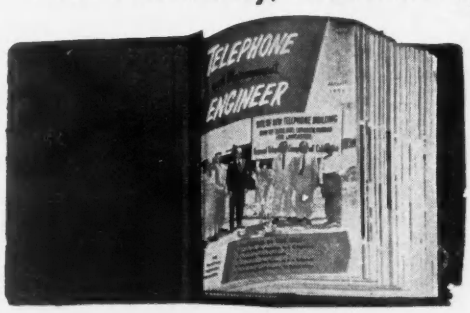

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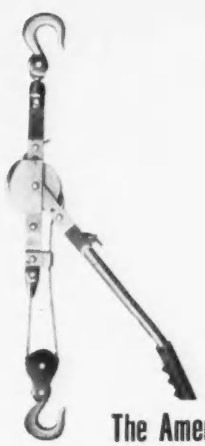

The American POWER-PULL combination hoist and puller takes the strain out of line construction. Designed for one-man operation, it gets the job done easier and faster —saving man-hours in line crew performance.

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Independent exchanges. We foresee a bright future for Independent telephony in Oklahoma and we are proud of the many fine and efficient managements that are leading the way in the field of improvements and extensions into new territory."

Reporting on service performed by the association for its members he stated "more and more companies are learning that the modest assessment for Association dues is returned to them many times over in value received."

"In the 1957 session of the Legislature," he said, "we were able to stall all damaging Bills and saw some other legislation enacted that is definitely helpful to the industry. Senate Bill No. 388 is an example of good legislation and we feel that it will be of great assistance in placing a legal status on boundary maps and will stabilize the matter of territory filings. Of course there remains some snarls and tangles in places where there were duplicate filings when the new law went into effect but the revised law does not increase the difficulty and will definitely prevent any new cases of duplication from occurring."

Referring to the Oklahoma association's Group Insurance plan, Mr. McFadden said, "Companies that have not carried membership in the Association can join and immediately become eligible. This is a new thing and representatives of Hardware Mutuals have been calling on member companies during recent weeks to explain the details of the plan and sign up applications. It includes Life, Hospitalization and Surgical Insurance and the rates are surprisingly low. We hope that there will be much interest in this plan as it cannot be placed into effect unless we are able to sign up a good majority of our members . . . ."

Other speakers appearing at the 2-day meeting were David A. Home, Administrator, REA, Washington, D. C.; USITA President Clive W. Haas, Big Timber, Mont.; Ray Holdridge, sales manager, Hardware Mutuals Insurance Co.; Ben Smith, general merchandising manager, Southwestern Bell Telephone Co.; Roy Thomas, CPA, Tulsa, Okla.; F. E. Hightower,

A. L. McFADDEN, president, Oklahoma Telephone Association, conducted the 22nd Annual Convention and addressed the group.

public relations director, General Telephone Co. of S. W.; and O. E. Hopkins, communications consultant, Civil Defense Survival Project for Oklahoma.

Officers elected are President, F. F. Wright, Kingfisher; 1st Vice Pres., Joe E. Trower, Mannford; 2nd Vice Pres., Leroy Guest, Davenport; Secretary, Hugh D. Straughn, Oklahoma City, and Treasurer, S. C. Rich, Oklahoma City.

Directors are W. E. Gosdin, Southwestern Bell Telephone Co., Oklahoma City; Leroy Guest, Central Oklahoma Telephone Co., Davenport; R. E. Harris, Southwestern States Telephone Co., Purcel; Jack Holt, Stilwell Telephone Corp., Stilwell; D. R. Majors, Carmen Telephone Co.,

DAVID A. HAMIL, R.E.A. Administrator addressing Oklahoma meeting.

Carmen; A. L. McFadden, Ringwood Telephone Co., Ringwood; F. E. Messecar, General Telephone Co., of the SW, Broken Arrow; Harrold R. Peterson, New State Telephone Co., Roosevelt; Joe E. Trower, Cimarron Telephone Co., Mannford; F. F. Wright, Western Light & Telephone Co., Kingfisher.

Georgia Independents Hold 35th Annual Convention

THE 35th annual convention of the Georgia Telephone Association was held at the General Oglethorpe Hotel, Savannah, Ga.

The general session was called to order with President Downing Musgrove of Homerville, presiding. President Musgrove welcomed the members and associate members, introduced the visitors to the convention, and gave an informative report of the activities of the association during the past year. At the conclusion of the president's report, Secretary-Treasurer, H. H. Cabaniss presented his report for the current year.

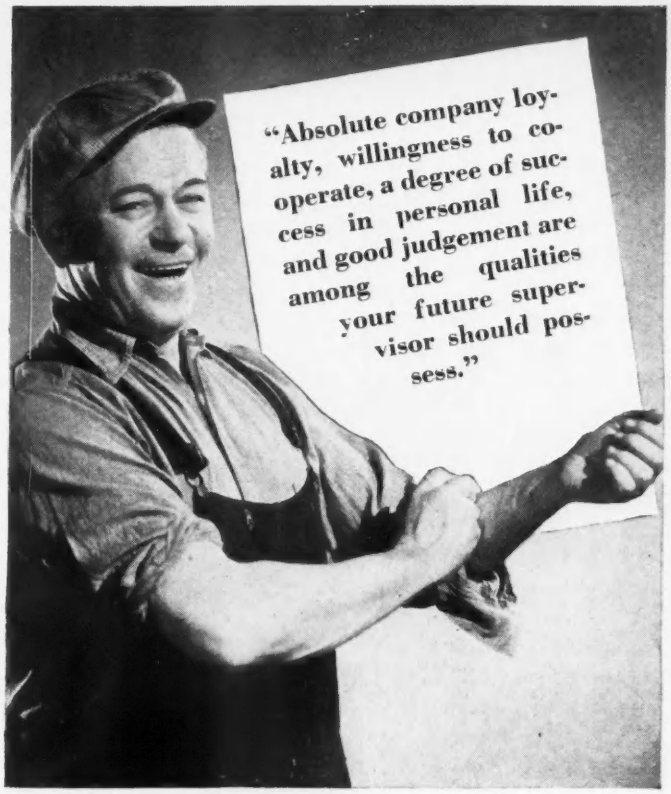
The first speaker on the program was Honorable Ben T. Wiggins, a member of the Georgia Public Service Commission, who gave an interesting and enlightening talk, dealing with the relationship between the Independent telephone companies and the Public Service Commission. Other speakers were: L. W. Hill, Tarboro, N. C., and J. S. Seigle and L. T. Robertson of the Southern Bell Telephone & Telegraph Co.

The following members were elected to three-year terms as directors of the association: C. J. Mathews, Statesboro; Mansfield Jennings, Hawkinsville; James L. Kirk, II, Moultrie; Glenn Bryant, Hinesville; and John Birchmore, Comer.

The retiring directors are: H. C. Boyd, Reynolds; John Cozart, Fitzgerald; J. E. Kirk, Dalton; W. L. New, Commerce; H. W. Vaughan, Chickamauga.

At the business session the board of directors organized by electing the following for officers.

President, Downing Musgrove; First Vice President, J. E. Evitt; Second Vice President, Cam B. Lanier, Jr.; and Secretary-Treasurer, H. H. Cabaniss.


"Absolute company loyalty, willingness to cooperate, a degree of success in personal life, and good judgement are among the qualities your future supervisor should possess."

How To Select The Best Man For Job

By ERNEST W. FAIR

SECURING the best individual for the job is vitally important. This check list of time-proven and tested selection factors provides a guide for selecting supervisors and department heads regardless of the level of the position.

SO THERE'S a new supervisor or department head post coming up in the company and a dozen candidates from which the telephone company executive must choose. — What shall he look for in each candidate to make certain the best possible man is selected?

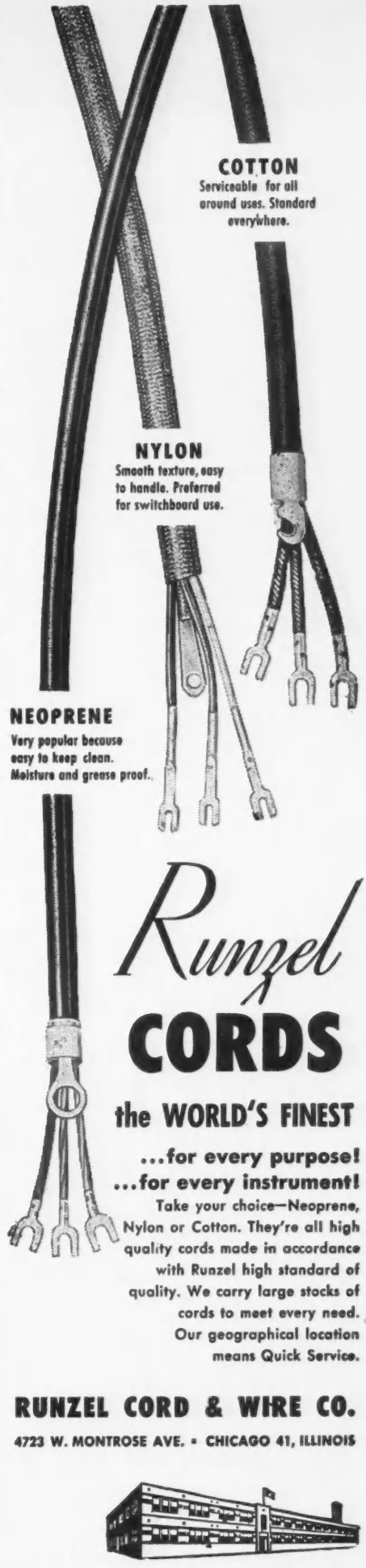
Securing the best individual is always vitally important; hit and miss selection nearly always overlooks the man who has the most to contribute to the job. Today's tough competitive conditions in the telephone business make it vitally necessary that the very best individual be found.

Many executives are well aware of this. They have, through experience and counsel, devised definite standards to guide them in selecting such supervisors and department heads regardless of the level of the position. We've checked more than a score of these where results have proved their value.

From a summary of these many time-proven and tested selection factors here is a list of qualities to look for in selecting such supervisory personnel in both the small and large company office.

Absolute company loyalty: — No individual can deliver maximum efficiency without full and complete loyalty to the firm for which he

Please turn to page 58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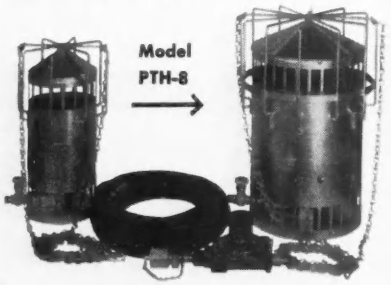

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works. It should rank topmost on any executive's list.

Co-operativeness: — There was a day when the ability to give and take. to work smoothly with others and to practice co-operation in getting things done were unnecessary in a supervisor or department head — those days are gone forever. To secure maximum results with least effort the good supervisor today must have the ability to take as well as give orders.

Originality: — This valuable quality enables one to figure out the best way to do things and not to proceed chiefly on a basis of imitation or to supervise solely on a program of following precedent. It assures the ability to come up with the idea that sets patterns rather than follow them.

Popularity: — People follow such an individual because they like that person. This makes supervision much easier than where it has to be forced because of the lack of such personal popularity.

Ability to get along with higher ups: — Good supervision calls for not only handling the men and women working under us — but to coordinate their efforts and our own with the company's top executives. Where a supervisor has this ability there is always a smooth flow of planning from the top of the company all the way down.

Sociability: — Getting along with others is a natural instinct some people possess and others do not. Where it is present in an individual he is always better fitted to size up situations quickly not only as they affect the job to be done but as they affect the people who are to carry out the details on each assignment.

A degree of success in personal life: — The man with a mixed up personal life seldom achieves any degree of success in even the most minor supervisory role. Those of us who cannot solve our personal life problems seldom possess the ability to solve the more difficult business problems which are a part of such positions.

Judgement: — This is a most vital factor in selection of supervisors of any kind or type. It is evident in the common sense an employe uses in handling the every day problems of the job he now has. Possessing it is assurance that such a person can render decisions in a supervisory spot without delay.

Verbal facility: — An often overlooked but very necessary quality. A command of words is vital, to some degree, in good supervision. The man who can speak with clarity, put together phrases and sentences so that their meaning will be understandable beyond any doubt is always assured of more accurate compliance from those who carry out the details.

Evidence of self education: — The employe who has shown positive efforts toward improving his business position in the past can always be depended upon to continue doing so in the future. He is always better prepared to handle a supervisory position.

"People follow the popular individual because they like him as a person. Lack of personal popularity handicaps the supervisor."

Aggressiveness: — The persistence to see any problem through to its final conclusion is a very necessary quality in any good supervisor. The individual who has shown little sign of aggressivness in his job to date is very unlikely to show any in the future.

Possess friends as well as enemies: — "He would be an excellent man — everyone likes him — hasn't a single enemy in the world," is a very nice compliment to pay any individual under consideration. However, the man who gets things done is seldom able to do so without making enemies at one time or another. Too many of the latter, of course, is a sign of weakness but our candidate will seldom be without enemies if he possesses the

qualities which make for good supervisory personnel.

Humor: — The good supervisor is never a wise cracking, joke-telling personality *but* he should definitely possess a good sense of humor. It relieves tense situations which he will have to handle.

Experience: — Experience in the field or in the job can never be left off any such check no matter how many other fine qualities the candidate may possess. Without it the firm must wait patiently while that experience is acquired and that can be a long and costly procedure.

Desire to excel: — This is most important in good supervisors. It determines the quality of job performance every time. It is demonstrated by the goals the individual seeks. It is shown in how his aspirations give the drive needed to get the job done.

Self confidence: — That helps a person make up his mind decisively and promptly. It inspires the same quality in those who must carry out details of the assigned task. Its lack means weakness and loss of respect from the staff.

Lack of prejudices: — This is a world loaded with prejudices of all kinds, manners and shapes. The good supervisor has to work with all of them. He can never get the most from men and women on the staff when held back by fixed prejudices with regard to race, creed or religion.

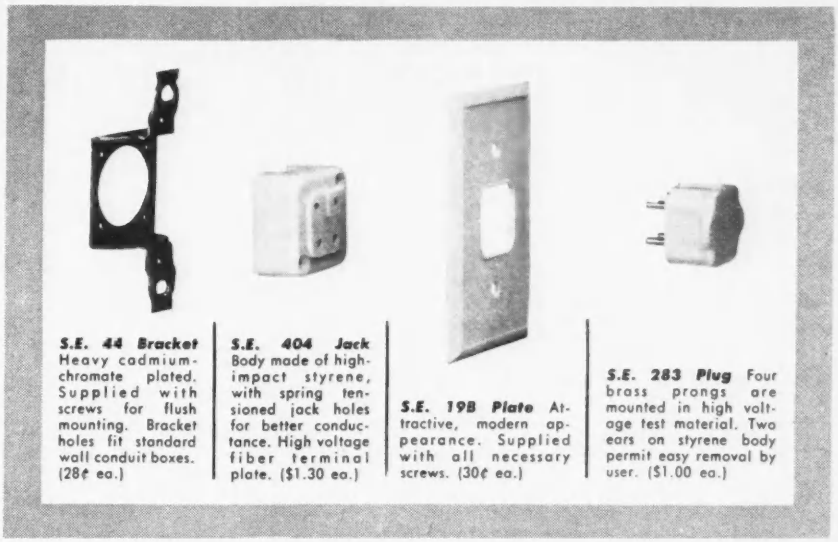
Liveliness: — This demonstrated quality always means that our candidate for supervisory position will work hard and play better; have the energy and vitality to handle the toughest and most exacting assignments in the future.

Knows the job he has now: — That's always a good check on quality of an individual. We can never expect performance in a new post from the man who has failed to conquer the problems of his present position. He will show the lack of ability to do so in the new post given him every time.

Good health: — When other qualities are equal between given candidates this is always a good one upon which to make the specific decision. The individual in possession of good health and who works at keeping it can always be depended upon to have the physical equipment required of a supervisory position in the future.

Seldom reverses decisions: — Re-

What's New at SUTTLE



S.E. 44 Bracket Heavy cadmium-chromate plated. Supplied with screws for flush mounting. Bracket holes fit standard wall conduit boxes. (28¢ ea.)

S.E. 404 Jack Body made of high-impact styrene, with spring tensioned jack holes for better conductance. High voltage fiber terminal plate. ($1.30 ea.)

S.E. 19B Plate Attractive, modern appearance. Supplied with all necessary screws. (30¢ ea.)

S.E. 283 Plug Four brass prongs are mounted in high voltage test material. Two ears on styrene body permit easy removal by user. ($1.00 ea.)

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For Flush or Non-Flush Wall Mounting

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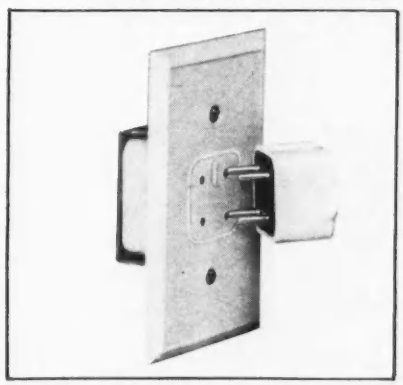
Now, for the first time, Independent Telephone Men can order a flush or non-flush type, 4-prong, wall-mounting plug and jack assembly from Suttle. These units are superior in quality and performance to all existing units . . . yet they cost no more.

Of a modern design, these Suttle assemblies combine attractiveness with durability. Plug and jack bodies as well as the wall plate are made of high-impact styrene . . . easy to clean, easy to look at. These units are available in brown or ivory styrene—be sure to specify the color desired in your order.

The S.E. 404 jack is the non-flush type, but with the addition of the S.E. 19B plate and S.E. 44 bracket it becomes a completely flush, modern installation.



Note jack is flush with plate.

Specify Parts By Number

S.E. 44 Bracket — cadmium-chromate plated ..... 28¢ each

S.E. 404 Jack—spring tensioned jack holes .....$1.30 each

S.E. 19B Plate—with necessary screws .....30¢ each

S.E. 283 Plug—four brass prongs .....$1.00 each

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TELEPHONE ENGINEER & MANAGEMENT'S

HANDBOOK DATA SHEETS

Prepared By

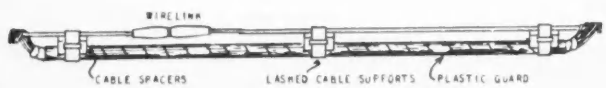
JOHN S. REED

Reliable Wire Link (Tension Splice) and Wirevise (Dead end) (cont.)

The Wirevise is made in one piece, and yet is designed to free one leg of the bail for assembling around spool insulators or through eye of thimble-eye bolt.

The two types of Wirelinks and Wirevises presently available are described in the following table.

No.	Item	Used for Wire Size	Used With	Construction
5059	Wirelink	12 BWG (.109)	Rural distribution wire and steel line wires	Heat treated aluminum tubes with case hardened triple protected steel jaws.
5079	Wirelink	9 & 10 AWG (.102-.114)	Copper and Copperweld line wires	Copper tubes with bronzejaws
5058	Wirevise	12 BWG (.109)	Rural distribution wire and steel line wires	Aluminum yoke and stainless steel bail.
5078	Wirevise	9 & 10 AWG (.102-.114)	Copper and Copperweld line wires	Bronze yoke and stainless steel bail.



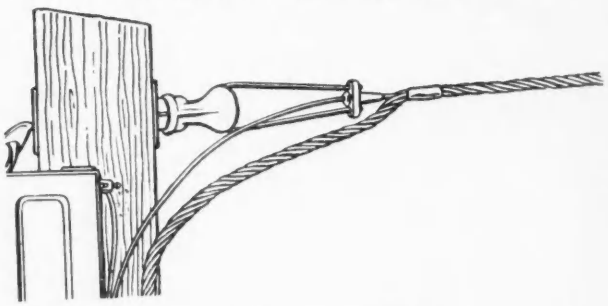
Wirelink used in splicing support wire.

Wirevises and Wirelinks are especially useful in installations of rural and urban types of distribution wire which is provided with a high strength support wire.

When joining ends of the support wire, these wire ends are cut back to provide proper staggering of the individual conductors for splicing. Sufficient insulation is removed from the support wire to enable fitting the Wirelink completely over each end. After the conductors are spliced, a plastic guard is fitted over the conductors below the support wire splice for mechanical protection of the conductor splices. Instead of using the guard, the splices may be covered with several overall wraps of high dielectric strength plastic tape and the spacers may be omitted.

Wirevise deadening support wire on pole.

At dead end points, the Wirevise is employed to deadend the support wire as illustrated below. The



insulation is removed from the support wire up to the point where the end of the insulation will butt against the Wirevise tube. The bared support wire is then pushed through the tube up to the desired point. The end of the support wire may be cut off behind the tube, or the wire may be brought down to the ground lug on the distribution wire terminal for connecting thereto.

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MULTI-CARD BULLETIN HOLDERS

Conserve circuit time . . . overtaxed facilities . . . operating force . reduce cost of service

One operator with her individual Routing Multi-Card file, containing over 95% of the routes for originating traffic, can do the job faster and more efficiently.—No need to bring in a second operator.—No guess work; routes are before her—*visible.*—Calls are completed quicker.—By this method of centralized provision of Routing records, more routes are available to the Central Office force. Consequently, less "121" calls go over LD circuits. With the use of the Acme Visible Multi-Card Bulletin Holders, each operator is able to determine over 95% of her routings and rates. Operator can immediately compute charges on Coin Box calls or where there has been a request for T & C. By not trunking to Rate & Route operator, less operator time is needed at these positions.

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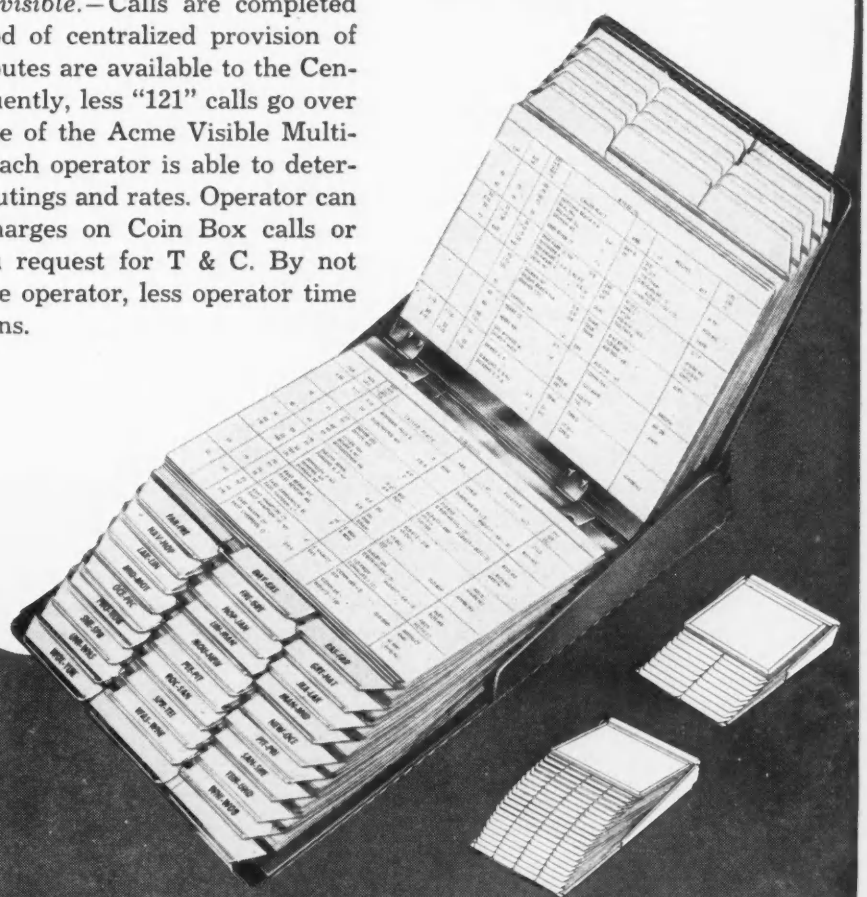

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9 CAPACITIES

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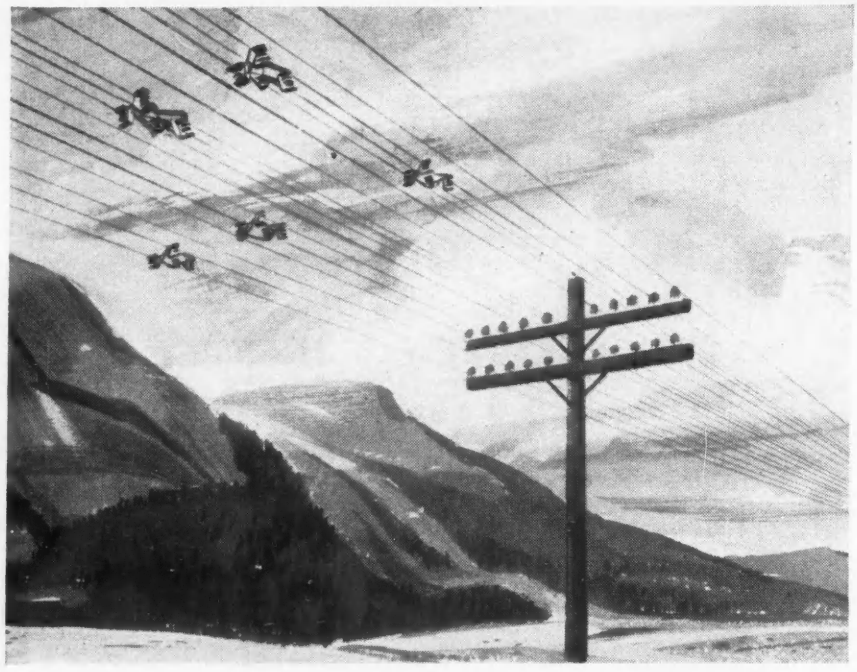

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easily, accurately and economically installed

with Case aluminum span-point brackets

The Case span-point transposition bracket now makes it possible to transpose communication wires at any point of the line **between poles,** regardless of pole spacing ...eliminates the need for special transposition poles. This lightweight (only 3½ lbs. complete with insulators and bushings) non-corrosive, ruggedly designed bracket features insulators that roll thus protecting wire insulation in stringing and reducing installation time. It is the **only** bracket designed **especially** for mid-span transpositions.

All Case transposition brackets come equipped with a special rubber bushing... in the event of glass insulator breakage, the line wire falls on the rubber bushing, with no loss of communication service.

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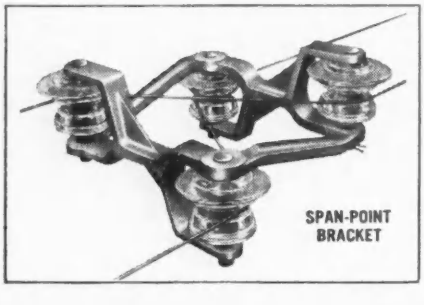
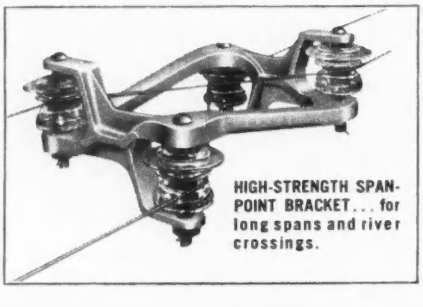


SPAN-POINT BRACKET



HIGH-STRENGTH SPAN-POINT BRACKET... for long spans and river crossings.

sults in any given firm come when supervisors are sure of their orders and plans and members of the staff know that they will be followed through. Overhead costs rise where the staff can never be sure a given supervisory decision will stand and not be changed tomorrow.

Age: — The smoothest running departments have always been those in which supervisors are older than the men and women working therein. It is a human trait to respect those who are older and not respect the experience and background of supervisors younger than we are.

Ability to explain: — Many of us can give orders but at the same time adequately explaining the reasons behind those orders is not always a quality we possess. The supervisor who can give orders is always assured maximum results will be obtained from every assignment.

Intelligence: — Above average intelligence is always a quality to check in any candidate for a supervisory position. It is also wise to guard against selecting an individual with intelligence far above that needed for the spot, however, since this results in everything going over the heads of the men and women in his department.

Works harder and longer than others: — The man who does only what is required to hold onto the present job seldom has the makings of a good supervisor even in a modest spot. The one who works harder and longer than others can always be depended upon to exercise the same qualities in the supervisory position where they will always be needed.

My Neighbors

"Can't afford the 'Business Man's Lunch.' Couldn't you fix me up with a 'Taxpayer's Salad'?"

sary in good supervision but experience has shown that people look up to and follow the individual a little taller than they; an unreasonable trait but one nevertheless very much in existence.

High frustration tolerance: — That's an absolute requirement for a good supervisor. Even temperament is basic requirement of the job. The man who can tolerate nothing but perfection all the time seldom attains the good results.

Appearance: — Good supervisors do not have to be movie stars in appearance — but they must be the type of people who give attention to their personal grooming. It inspires respect from others.

Emotional balance: — Possession of this quality is always to be desired in any supervisory personnel. The man who can win without exalting and lose without moping always has a smoother functioning department. — *Ernest W. Fair.*

New York Bank Aids Pickford Telephone Co.

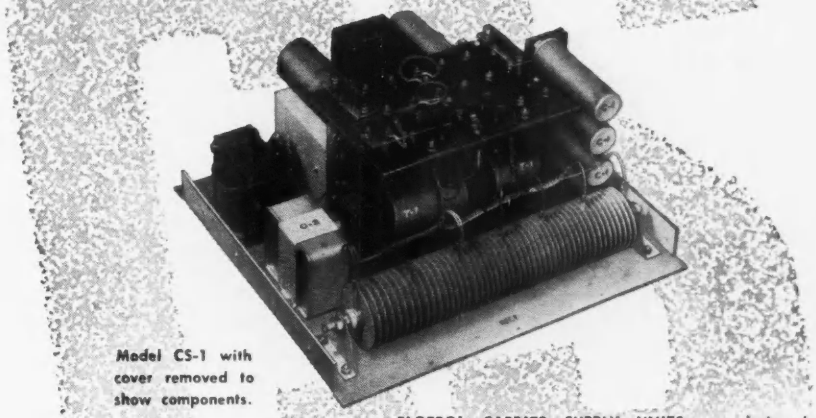
PICKFORD (Mich.) Telephone Co. has announced Michigan Public Service Commission's approval of a $185,000 loan obtained from the First National City Bank of New York.

A substantial portion of the loan will be used to pay for moving the company's telephone lines located along the highway right-of-way between Pickford and Cedarville made necessary by the widening of the highway. The cost of the road move will, according to P. E. Taylor, general manager of Pickford Telephone Co., become a matter for future service rate consideration.

The company also expects to extend and enlarge its operations in the area of the Kinross Air Base to provide service to the permanent housing developments there and the expected future residential and business developments in that area. Expansion of its services in the Neebish area and completion of the automatic dial installations in the Pickford area will also be made possible by the loan.

Pickford Telephone Co. was formed before the turn of the century by Frank Taylor and has been continued by the Taylor family since that time.

FLOTROL Carrier Supply units



Model CS-1 with cover removed to show components.

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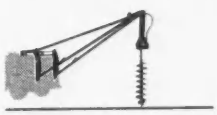

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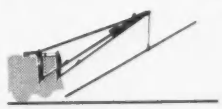

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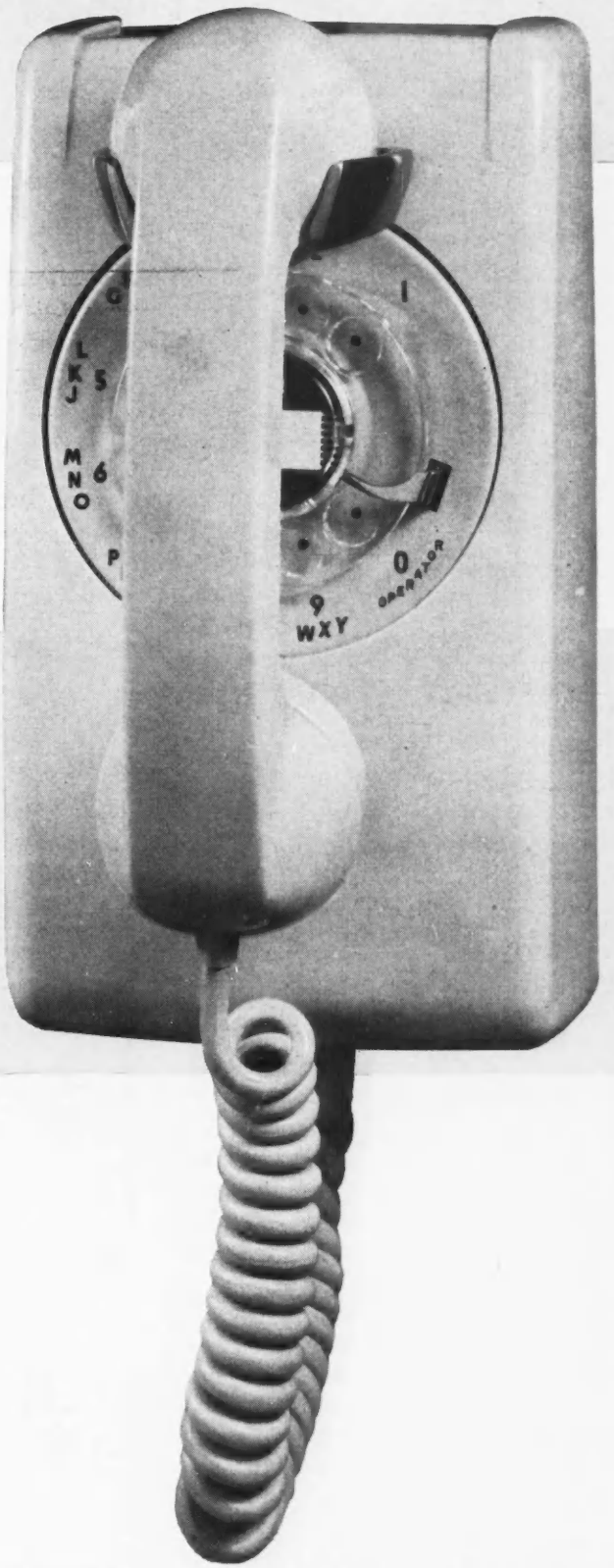

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Rate Increase Activity Picks Up

More Companies Request Increases To Halt Declines In Net Earnings

PART of the telephone story for '57 is found in record gains, new technical advances and the industry's expansion-improvement programs. But as the industry closed its books for the year one fact made itself known: to halt declines in earnings more companies were taking the rate troubles to the regulatory commissions and requesting new rates to offset continued cost increases.

As the year ended, Ohio Bell Telephone Co. notified the Ohio Public Utilities Commission that it plans to file a rate increase application to halt the decline in its earnings.

The Ohio development was one of a series around the nation as the tempo of Bell System companies' rate activity continued to pick up as the result of continued increases in costs and lower earnings.

During December, three Bell System companies — the Chesapeake & Potomac Telephone Companies of Maryland and Virginia, and the Pacific Telephone & Telegraph Co. in California — amended pending rate applications upward to cover the cost of recently negotiated wage increases; the Indiana Bell Telephone Co. filed for changes in its intrastate long-distance schedules to reflect more accurately the operator time spent on various calls.

Ohio Bell Vice President L. T. Pendleton, in a statement, pointed out, "We have had a succession of annual wage increases since our last rate application in December, 1953 — one each in the years, 1954, 1955, 1956. In addition, our tax bill and the cost of materials and equipment have continued to go up, and the result has been a downward trend in earnings which presents a serious threat to our financial strength and our present plans to add $250,000,000 in new equipment, lines, and buildings in the next three years."

SOEWARDI KARTOSOEDHARMO, manager of the Bogor Telephone Company in Indonesia (center), watches with interest as RICHARD H. RAWLINGS, operating vice president of General Telephone Co. of Ohio, points out the function of the audichron, a time recording machine. The Indonesian will be a guest of General Telephone Co. in Marion for the next six months under a technical education program sponsored jointly by his country and the American government.

The company said that preliminary work on the rate application is under way, and that, the amount of the overall increase to be sought and the rates proposed to produce it will not be known until studies are completed. It added that Ohio Bell rates have increased 27 percent compared with a 102 percent rise in the cost of living since 1940 and a 35 percent average boost in telephone rates for the country as a whole.

In its application, Indiana Bell proposed "bargain" prices for station-to-station long distance calls after 9 p.m., and increased rates for person-to-person messages at all hours. Revenue effects of the proposal will depend on how many persons take advantage of the changed rates, a company official said.

Indiana Bell's night time bargain feature would double the amount of conversation time for the same rate from three minutes to six, while overtime would be computed at the same two-for-one basis. Present minimum station-to-station charges would be unchanged, with minor exceptions, including a five-cent reduction on some calls of less than 200 miles, a five-cent raise for calls of eight mil

or less, and reduction from four to three minutes in the initial period on calls of up to 24 miles.

The company's Secretary and Treasurer, Allan H. Warne, declared that a person-to-person call carries a premium rate because it requires more operator handling. "Revisions we are proposing in long-distance charges are a natural development from such innovations as customer and operator dialing," he said.

Also proposed was an extension of the present practice of charging an extra rate for handling collect calls. A flat 10-cent fee was proposed on all collect station calls, while such fees presently are charged only for calls up to 14 miles.

To offset higher wage costs, Pacific Telephone amended its $208,000,000 gross rate increase application, pending before the California Public Utilities Commission, to encompass $12,000,000 in added annual gross revenues.

Unchanged is the 6.9 percent rate of return sought by Pacific Telephone in its original application, filed in August. No basic rate changes were asked in the August filing, and the company now is requesting approval of monthly adjustments ranging from five cents on four-party residence service to 35 cents on single-party residence and all business service. Some increases on person-to-person long distance calls and some items of special equipment also are being asked. The August petition sought other adjustments on intrastate person-to-person traffic, and changes in service connection, installation, and various miscellaneous rates.

C&P of Maryland, asking the state Public Service Commission to accept the application for additional revenues of $1,400,000 to cover the recently approved wage increases, over and above the company's application for $6,855,000, was told that the new evidence and exhibits would be considered a part of the present case. The ruling was made over the objection of People's Counsel Winfred T. McQuaide.

In a similar situation in Virginia, the C&P company has asked the state Corporation Commission to approve

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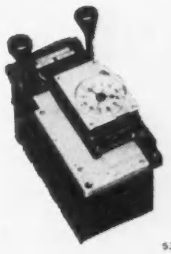

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THE GIANT telephone shown above caught the attention of the more than 1800 persons who visited Northern Ohio Telephone Company's newest exchange at Medina. Featured in the Open House were numerous displays, a miniature telephone exchange, special equipment and the I.B.M. equipment used in the preparation of subscriber statements. The Medina exchange is the first of Northern Ohio Telephone Company's exchanges to provide full Direct Distance Dialing for all subscribers. This modern exchange is one of the few in the entire country which provides identification of both calling and called numbers. The new exchange building (shown above) and central office equipment represents an investment of $800,000.

an additional $1,270,000 in rate increases, in excess of its pending application, to recapture the cost of intrastate wage adjustments. The Virginia company is asking $7,800,000 a year, including the new amount.

Virginia hearings last month, immediately prior to their completion, heard opponents of the rate petition contend that the company would make a 6% return on its investment with a $1,565,000 boost in revenues.

Southern Bell continued its strong plea for a Louisiana rate increase in sessions before the state Public Service Commission Dec. 2-3, again emphasizing that its earnings on investment in the state are less than the rate for which it was able to borrow debt capital recently.

During the sessions, the commission refused for a second time to grant the company a $7,000,000 emergency rate adjustment, but Chairman Nat B. Knight, Jr., left the door open for possible action before the hearings are concluded with the comment that "if at any time the commission feels it is justified we can pass on the request."

The hearings were recessed Dec. 3 for an indefinite period of time to permit the commission staff to prepare for cross-examination of Southern Bell witnesses. Commission Attorney Theo. F. Cangelosi said that two or two and a half months probably would be needed.

Vice President R. R. Stubbs told the commission that the company needs an overall rate boost totaling $13,000,000 a year, and that if it is granted that amount, it will be able to launch a full-scale expansion program costing about $49,000,000 in 1958. Without any increase, he declared, Southern Bell will be able to spend only $14,000,000 on construction next year, or less than one-third of what is needed. With the $7,000,

000 emergency adjustment, he went on, the company will be able to finance a $30,000,000 construction program during the year. The emergency adjustment, Mr. Stubbs testified, will give Southern Bell 5.91 percent in earnings, still less than any other major utility in the state.

Under the reduced construction program, the Southern Bell official declared, the company expects about 69,000 unfilled orders for new telephones and about 78,000 requests for upgrading by the end of 1959.

"Such a situation," he stressed, "has never been experienced in the history of the company, but we can reach that alarming condition very quickly in the absence of adequate construction."

The company's earnings in the state currently are 4.2 percent on investment, compared to the cost of money of 4.91 percent the company experienced in selling a debt capital issue recently by competitive bidding.

Since the 1952 rate increase, Stubbs brought out, the situation has worsened steadily as a result of last year's rate reduction, five general wage increases during the period, amounting to $3,290,000, and steadily rising costs of construction. Southern Bell's postwar construction program in the state has totaled $300,000,000, he pointed out. On the basis of present rates, the company's rate of earnings has dropped 31 percent since the rate order of 1952.

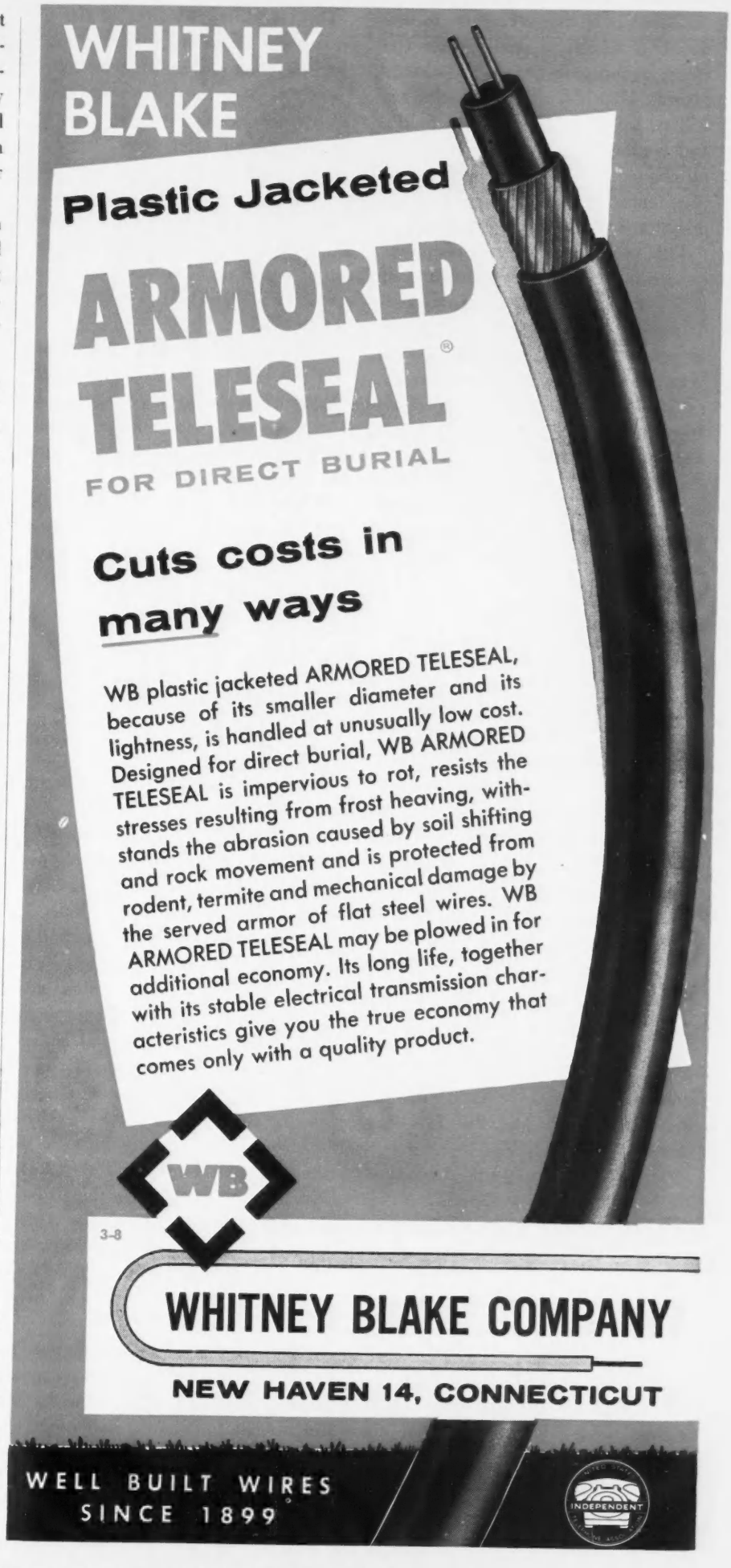
Kansas Commission OK's S. W. Bell Rate Increase

RATE revisions designed to increase Southwestern Bell Telephone Company's Kansas revenue $212,600 annually were approved December 6 by Kansas Corporation Commission.

Approximately $114,900 of the increase will come from reclassification of 13 dial exchanges which have outgrown their current rate groups. Exchanges are Lawrence, Garden City, Hays, Hogoton, Hutchinson, La-Crosse, Lecompton, Leavenworth, Lincoln, Oakley, Smith Center, Stockton and Salina.

Increases will average about 50 cents a customer, the commission said.

One-party business rates in 13 ex-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changes will increase 25 cents to one dollar a month, depending on the classification into which the city is placed. Monthly residential charges will go up 25 cents except in Salina and Hutchinson, where there will be no change. Rates will be lowered in two exchanges being reclassified downward, Cheney and Hanover.

The cost of local pay telephone service in cities with a population of 2,500 or less will be increased from 5 to 10 cents a call. This is expected to produce an additional $10,000 a year. This move will standardize local pay telephone charges, since the 10-cent rate has been in effect since 1952 in larger cities.

An estimated $51,000 a year will come from revision in charges for toll calls now costing 10 or 15 cents in instances where the caller talks more than three minutes.

The remaining $36,700 of the increase will come from higher rates charged joint users of telephones. The KCC said the revisions will net the telephone company approximately $99,000 a year after taxes.

In seeking the revisions, the telephone company said its labor costs in Kansas have gone up $5-million since the last rate revision and that the company's Kansas construction program hit a record 31½ million dollars in 1957.

Marion Beatty, KCC chairman, said the increase will bring Southwestern Bell's return in Kansas to 5.78 percent on its investment less depreciation. He said the company has been earning 5.68 percent.

"These figures are based on the original cost basis, the formula most favorable to the rate payer," Beatty said.

Bell's Growth Rate Drops In '57

Bell Adds 3,000,000 Phones In 1957; Net Earnings "About $13 Per Share"

THE DYNAMIC expansion of American Telephone & Telegraph Co's nationwide Bell System slowed down a bit during 1957, Frederick R. Kappel, president, indicated in a year-end report.

"Growth of the Bell System in 1957 was very large," Kappel said, "although the rate of growth was not as fast as in 1956."

Kappel said A.T.&T.'s 1957 earnings are "about $13 per share" or nearly the same as the $13.16 a share earned in 1956 and the $13.10 a share earned in 1955.

The 1957 earnings are about equal to the prior two years' per-share figures, Kappel added, despite an increase of about six million shares above the average number outstanding in 1956, and a rise of some 13 million over the average outstanding in 1955.

The Bell System "added nearly three million telephones in 1957," Kappel said, which is less than the 3,227,000 gained in 1956, but more than the 2,880,000 added in 1955. The company currently has more than 52 million phones in service, he said, up from 49,438,000 in 1956 and 46,218,000 in 1955.

Kappel said 91 percent of the Bell System's telephones are presently dial operated, compared with 89 percent in 1956 and 87 percent in 1955.

"Dialing of long distance as well as local calls is growing rapidly," he said, "and some five million customers can now dial directly to many faraway points without the assistance of an operator, and 15 million can dial directly to nearby points."

Long distance conversations handled by the Bell System in 1957 increased 7 percent over 1956, Kappel said. This was well below the 10 percent gain posted in 1956 over 1955, and the 12 percent rise in 1955 over 1954, but it was greater than the 5.5 percent increase in 1954 over 1953.

Kappel noted the Bell System spent some $2.5 billion in 1957 on construction to provide the new facilities needed for growth and modernization.

"To help finance this construction," he said, "the System obtained about $1.15 billion of new capital in the past year. Most of this was raised through the sale of debt issues, and was, of course, in addition to the more than $500 million obtained in the fall of 1956 through the offering of A.T.&T. stock to share owners."

"Although 1958 growth and construction may be somewhat below 1957," Mr. Kappel said, "we expect they will still be very large and that much new capital will be required."

With this in mind, A.T.&T. has called a stockholders' meeting for January 15, at 2 p.m. in the company's office at 50 Varick St., N. Y. Shareholders will be asked to authorize a $718 million issue of convertible debentures, and a new employes' stock plan under which seven million shares would be made available for offering to employes during the next several years.

"The long-term outlook is that telephone services must be widely expanded to meet all the needs of our fast-growing country," Mr. Kappel said. "Under these circumstances, we foresee the need for continuing heavy construction which will require new capital in the range from $1 billion to $1.5 billion a year."

"The first and clear necessity is to have earnings that will assure the success of such a program," Mr. Kappel added. "Only on that foundation can the needs of the nation be met as they should be."

"Bell System earnings, which are currently at the rate of 6.7 percent on capital, in our judgment definitely should be higher and we shall vigorously pursue our efforts to convince regulatory commissions that the level of earnings should be raised," Mr. Kappel said.

The Bell System's current 6.7 percent return on capital is below the 6.8 percent return posted in 1956 and 1955, but above the 6.2 percent return reported for 1954.

Interim Order Boosts Revenues of Four California Firms

AN INTERIM rate order granting four telephone companies serving the Los Angeles, Calif., extended area $15,271,000 in estimated additional annual revenues was handed down

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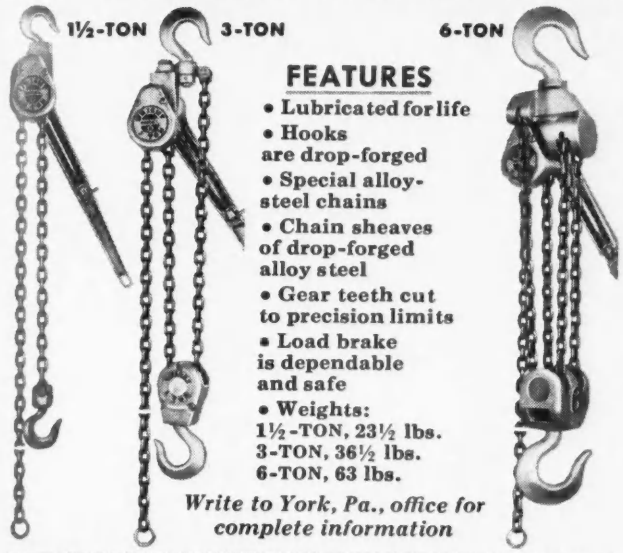

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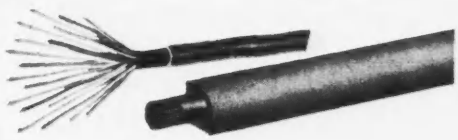

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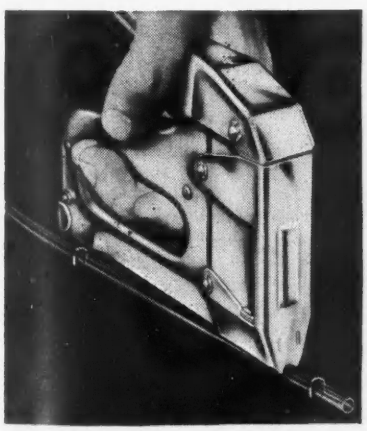

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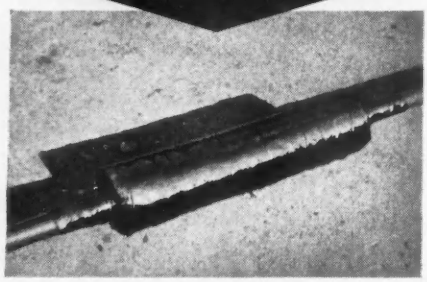

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last month by the California Public Utilities Commission.

Companies affected are Pacific Telephone & Telegraph Co., General Telephone Co. of California, California Water & Telephone Co., and Sunland-Tujunga Telephone Co. Added revenues are estimated to be $12,066,000 for Pacific Tel., $2,089,000 for General, $1,068,000 for California Water & Tel. and $48,000 for Sunland-Tujunga.

The order changes the mileage steps on multi-message unit calls in the Los Angeles extended area. Its effect, the commission said, is to add one message unit to the number charged on calls of over eight miles.

The four companies had asked an increase in the message unit rate from 4.25 to 4.3 cents, which was not allowed by the commission in the interim order. The commission emphasized that the order is an "interim decision" which might be modified later.

AIEE Committee to Present Telegraph Symposium

AT THE forthcoming Winter General Meeting of the American Institute of Electrical Engineers, to be held at the Hotel Statler in New York City, the Institute's Communication Switching Systems Committee will present a symposium on International Developments in Telegraph Switching. This symposium, to be conducted at 2:00 p.m. on Thursday, February 6, will include outstanding speakers from three of the leading European telecommunications manufacturing companies and research and development laboratories, as well as a group of prominent U. S. engineers.

E. Rossberg of Siemens & Halske, A. G., Germany, will discuss a new teleprinter switching system utilizing motor-driven selectors. E. P. G. Wright, of Standard Telecommunication Laboratories, Ltd., England, will describe a new concept for fully-electronic automatic signal sorting and distribution system. Dr. J. M. Unk of N. V. Philips' Telecommunicatie Industrie, Netherlands, will discuss communication networks — for coded information. Messrs. J. A. Brustman, I. Cohan, and L. S. Levy will cover RCA's automatic communications switching system.

Subject matter to be discussed at this symposium will be of considerable interest to all telecommunications engineers and others concerned with progress in the handling of telegraph traffic and allied data transmission.

Lincoln T. & T. Announces Supervisory Appointments

SUPERVISORY appointments in the plant department of the Lincoln (Neb.) Telephone & Telegraph Co. have been announced by Max C. Walker, general plant superintendent.

Ralph J. Connors, Lincoln wire chief since 1950, became plant supervisor in the general plant superintendent's office; Byron D. Pattison succeeded Connors as Lincoln wire chief; Robert W. Blackford was named equipment foreman and Dale C. Weaver service foreman.

Connors started as a shopman in Lincoln in 1925 and became a warehouseman and clerk before moving to York as a clerk in 1937. He moved to David City in 1938 as assistant area manager before transferring to Nebraska City in 1941 where he was a combinationman, chief testman and wire chief before returning to Lincoln as assistant wire chief in 1949.

Pattison was first employed as a groundman at Steinauer in 1934 and worked at Humboldt and Tecumseh before becoming a lineman in the construction department at Lincoln in 1935. He was a building serviceman, shopman, combinationman and an installer-repairman PBX before becoming service foreman in 1951. He was named equipment foreman in June 1957.

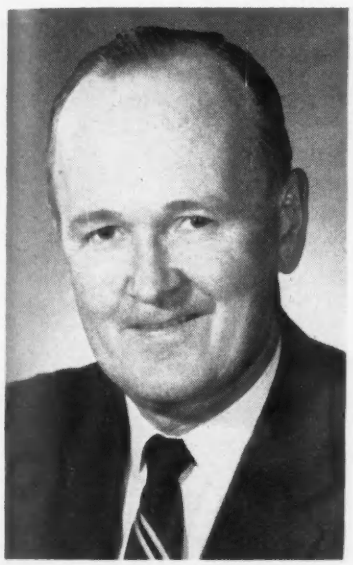
After working as an installer for Western Electric from 1944 to 1951, Blackford joined LT&T as a combinationman at Lincoln in 1951. He became an installer-repairman PBX in 1953 and service foreman in June 1957.

Weaver was a groundman and lineman in the construction department from 1945 to 1948 and became a combinationman at Lincoln in 1952. He was named an installer-repairman PBX in 1955.

Thomas R. Warner Joins USITA's Washington Staff

THOMAS R. WARNER has been appointed to the staff of The United States Independent Telephone Association in Washington, D. C., as Radio Engineer, Clyde S. Bailey, executive vice-president announced last month.

Warner was formerly vice president and general manager of National Bus Communications, Inc., and director of communications of the Greyhound Corp. before joining USITA.



THOMAS R. WARNER

A radio amateur since 1927 and a graduate of Michigan State College in 1935, Warner served as radio engineer of the Michigan State Police before entering military service as a first lieutenant of Cavalry in 1940. In 1944-45 he was Lieutenant Colonel and Chief, Department of Communications, The Cavalry School.

He has been associated with Greyhound Corp. since 1945, first as radio engineer and for the past five years as director of communications and, concurrently, with National Bus Communications. Recalled to active duty in 1951-52, Colonel Warner served as Plans Officer, the Signal Corps Training Center and Executive Officer of the Signal Corps Replacement Training Center, Fort Gordon, Georgia.

He is presently Colonel, Signal Corps, USAR, a member of the Reserve Officers Association, and of the Institute of Radio Engineers.

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SETS
IN COLOR
In colors to match all telephones and trimmed to fit all makes, Whitney Blake's famous TELECORD Sets are now available in hand set and line cords in lengths up to 25 feet.
TELECORD, noted for the toughness of its jacket under adverse conditions, is the logical replacement cord.
TELECORD, never frays and is highly resistant to abrasion, perspiration, humidity, oil and grease.
Specify Whitney Blake Replacement Sets in black or colors when ordering from your independent telephone supply house.
INDEPENDENT
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10-8
WELL BUILT WIRES SINCE 1899
WHITNEY BLAKE COMPANY
NEW HAVEN 14, CONNECTICUT

New Steel Fish Tape Fitted With Grip For Pulling or Pushing

Transposition Bracket

THE CASE aluminum cross-arm transposition bracket now has an extended mounting slot which fits *all* standard 12″ and 8″ pin spacings. This extended slot eliminates the need for costly re-boring whenever a new carrier circuit design calls for a reduction in wire spacing from 12″ to 8″, thus saving the customer thousands of dollars per year.

This improved design will replace the original Case cross-arm bracket as it offers the same basic features plus the extended mounting slot.

For free, illustrated folder, *Check New Product* 217.

Lineman's Boot

A NEW lineman's boot, introduced by the Chippewa Shoe Co., features "lace-to-toe" design for comfort and protection.

Chippewa bootmaking experts explain that the full lacing to the toe is designed to give the same foot and ankle protection and comfort as in hockey, football and basketball shoes where it has long been regarded as essential. It is particularly important, they point out, for the positive support it gives the ball of the foot, a critical fatigue area for men performing linemen's duties.

New Lineman's boot features "lace-to-toe" design.

The new 10-inch boot is constructed out of Black Full Grain Western Oil Tan leather, with a Neoprene Cord outsole and heel, including an extra leather lift in the heel to prevent climbing irons from slipping.

Other features include a leather lined vamp, 17 gauge heavy duty steel shank, specially-selected heavy weight insole, leather pole guard over instep, clear shank Oak leather midsole, reinforced backstay with pull strap and leather top facing. Stud hooks are steel and the boot comes with sturdy rawhide laces.

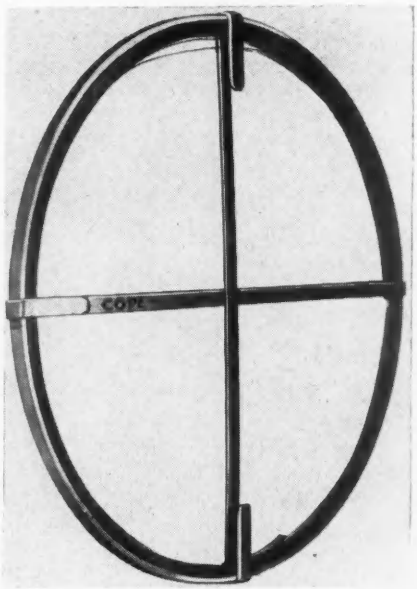
For additional information, *Check New Product* 218.

Fish Tape

T. J. COPE Division of Rome Cable Corp., Collegeville, Pa., makers of underground installation equipment, is now manufacturing fish tape in a range of sizes and weights for light, standard, and heavy duty conduit work.

Made of spring steel, Cope Fish Tapes come fitted with a ball roller end, plus a hand grip for both pushing and pulling. Tapes are mounted in a steel frame.

Seven sizes of Fish Tape are available, the smallest for light duty measures ¼″ x 1/16″ and weighs but 11 lbs. per 100 ft. Largest tape is 1″ x ⅛″ at 49 lbs. per 100 ft. All sizes may be had in lengths of 100 to 500 ft.



New fish tape features hand grip for both pushing and pulling.

The use of fish tape is a commonly accepted method for getting the first line through a conduit — particularly short runs and small ducts. For larger conduit and longer lengths, the company recommends the powerful Cope Pneumatic Fishline, an air-operated device which makes it possible to fish conduits — regardless of length and diameter — in a matter of minutes. — For complete data, *Check New Product* 219.

Tree Wire

NEWLY DEVELOPED "Tuffcote" — a tree wire for rugged service in tree growth areas spanned by telephone lines, is now being produced by National Electric Products Corp.

The new tree wire is already being installed by the Bell System divisions to overcome operational problems encountered with conventional wire used in tree service.

"Tuffcote" is made of either gal-

vanized steel or copperweld with a special protective covering. The tough, all-weather insulation is applied on the telephone company's own wire or available on wire specified by the client and furnished by National Electric.

Desirable properties of "Tuffcote's" insulation include: extreme abrasion resistance, all-weather durability, intrinsic toughness and high dielectric strength.—For complete data, *Check New Product* 220.

Safety-Step Ladders

AN IMPORTANT advance in the construction of its line of lightweight, non-corrosive aluminum ladders is announced by the Ballymore Co.

Ladders with steps made completely of extruded aluminum are now available to increase the safety

New ladder features steps made of extruded aluminum.

factor and prolong the ladder's life. The solid, ribbed aluminum steps give the user added security and confidence, whether wearing high-heeled or flat-soled shoes. The new step design also permits a cleaning action . . . promotes good housekeeping.

Constructed of tough, all-welded aluminum tubing, there are no bolts or rivets, no parts to loosen.

For complete information, *Check New Product* 221.

Systems Motor Kit

THE Holtzer-Cabot Motor Division, National Pneumatic Co., Inc.,

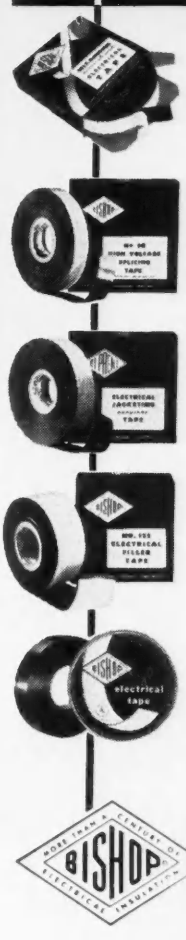
BISHOP...

Producer of World Famous

BI-SEAL

(The Electrical Tape With A Memory)

Offers 5 Electrical Tapes for Moisture Sealing, High-Voltage Splicing, Jacketing, Insulation Build-Up, and All-Purpose Taping.



FOR PERMANENT MOISTURE SEALING

Bi-Seal Self-Bonding (polyethylene based) Electrical Tapes. Water absorption as low as .0065%. Operating temperatures range from −55°C. to 85°C. Power factors are .0006 and .0021 for 1000 cycles.

FOR HIGH-VOLTAGE CABLE SPLICING

No. 30 High Voltage Splicing Tape. Developed especially for splicing cables insulated with ozone-resistant compounds and operating at 2000 volts or more. Superior ozone and corona resistance.

FOR PERMANENT CABLE JACKETING

Bi-Prene (neoprene) Jacketing Tape. For splicing neoprene-sheathed cables. Protects against ozone, heat, moisture, sunlight, oil, grease, hydrocarbons and chemicals, particularly acids. Flame resistant.

FOR RAPID INSULATION BUILD-UP

No. 125 Electrical Filler Tape. ⅛" thick insulating compound in tape form. Easy to mold to any shape. Fuses to a solid, flexible mass. For cable splice build-up, covering sharp cornered connectors, padding bus bars, cable end sealing.

FOR GENERAL INSULATING AND JACKETING PURPOSES

Vinyl Electrical Tapes. Thin, tough pressure-sensitive tapes with great adhesive strength. Offer complete electrical and mechanical protection for most general taping problems. Highly elastic. High dielectric strength.

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New Holtzer-Cabot systems development motor kit.

is marketing a Systems Development Motor Kit, which will make it possible to determine proper servo, torque or synchronous motor required for instrumentation and automation applications. Primarily designed for laboratories and engineering departments, the kit eliminates the expensive time consuming necessities of purchasing individual sample motors for test and application purposes.

This kit contains all the necessary motors, motor components, and gear reduction units to assemble thirty-two different servo, torque or synchronous motors, with or without integral gear reduction units.

A simplified manual is included which contains all the necessary instructions for assembling the motors and gear reduction units. Bench tools are required to make up anyone of the motors. The manual also contains complete motor performance data including speed-torque curves.

The kit includes the popular Holtzer-Cabot R-24 and R-25 frame sizes, which are in use in hundreds of instrument and servo system applications.

The Holtzer-Cabot Systems Development Motor Kit is available, from stock, through all Holtzer-Cabot Sales Offices. — *For further information, Check New Product* 222.

New Interrupter Unit

A COMPLETELY new design tone alternator-interrupter unit is available from Holtzer-Cabot Tel. Division of National Pneumatic Co., Inc. The

new tone alternator interrupter unit is designated MG-252.

The interrupter portion of the unit contains provision for a maximum of 32 spring packs. Cams, and cam followers, are of nylon for maximum life. Five, six and eight-second timing cycles are available.

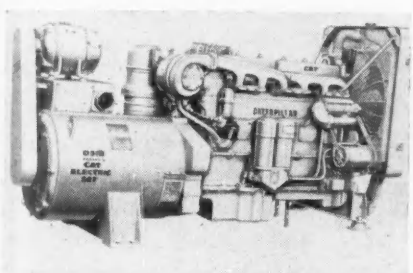
The tone alternator features permanent magnets and eliminates the necessity for slip rings and brushes and consequent maintenance. The tone alternator outputs are connected to a terminal board mounted in a convenient location on the side of the unit.

The unit is essentially a two bearing motor-generator set having permanently lubricated, double sealed ball bearings requiring no maintenance for the life of the bearings. The interrupter is driven through nylon spur gears which require no lubrication. By mounting the interrupter on an "A" frame over the motor-generator set, the unit is unusually compact with overall dimensions of 6½" x 12⅜" x 9¼" high.

Available in standard telephone grey enamel finish, the machine is a compact complete package for all telephone tone and interruptor requirements. For complete data, *Check New Product* 223.

New Caterpillar Engine

THE COMPACT and durable Caterpillar D318 (Series G) Engine is now available as the power unit for both turbocharged and naturally as-



New Caterpiller D 318 (Series G) engine.

pirated electric sets, according to Caterpillar Tractor Co.

The new Cat D318 (Series G) Electric Sets combine the recently-announced Series G equivalent of the Cat D318 engine, with the space-saving and efficient self-regulated

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ADVERTISING, Directories — *General Telephone Directory Co., 1800 Oakton Street, Des Plaines, Ill.*—[ADV. 1]

BELTS — CLIMBERS — COMPLETE LINEMEN'S EQUIPMENT, *W. M. Bashlin Co., Bashlin Bldg., Grove City 1, Pa.*—[ADV. 2]

BOOTHS—Acoustic Telephones — *Sherron Metallic Corp., 1202 Flushing Ave., Brooklyn 6, N. Y.*—[ADV. 3]

BORING MACHINES, EARTH — *Highway Trailer Co., Edgerton, Wisc.*—[ADV. 4]

CORDS, Switchboard (with or without plugs), Instrument (retractable and regular) and Operators — *Commercial Cord & Supply Co., Inc., 26 Main St., Clifton Springs, N. Y.*—[ADV. 5]

CORDS, Switchboard & Telephone — *Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago 41, Ill.*—[ADV. 6]

PIPE PUSHERS — *Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa.*—[ADV. 7]

POLES, CROSSARMS, pressure creosoted. *Conroe Creosoting Co., Box 109, Conroe, Texas. Telephone PL 6-4484.*—[ADV. 8]

POLES, Southern Yellow Pine — *Kennedy Saw Mills, Box 54, Shreveport, Louisiana* — [ADV. 9]

POLES, Southern Yellow Pine — *Taylor Colquitt Company, 217 E. Main St., Spartanburgh, S. C.*—[ADV. 10]

POLES, Southern Yellow Pine — *Texas Creosoting Co., Orange, Texas.*—[ADV. 11]

PROTECTIVE EQUIPMENT — *Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.*—[ADV. 12]

REBUILT TELEPHONES & SWITCHBOARDS — *Tallen Co., Inc., 159 Carlton Ave., Brooklyn 5, N. Y.*—[ADV. 13]

TELEPHONE EQUIPMENT AND SUPPLIES — *Telephone Repair & Supply Company, 1760 Lunt Avenue, Chicago 26, Ill.*—[ADV. 14]

WIRE, Insulated — DATED DROP WIRE — Neoprene or Weatherproof — *Alphaduct Wire & Cable Co., New Brunswick, N. J.*—[ADV. 15]

WIRE, Insulated Drop and Bronze or Copperweld — *Acorn Insulated Wire Co., Inc., 36 Freeman St., Pawtucket, R. I.*—[ADV. 16]

constant voltage Cat Generator, to produce a compact, dependable unit for generation. The turbocharged electric set arrangement is rated at 75 KW, and the naturally aspirated at 60 KW.

Contributing to the reduced dimensions of the units is the generator design, which features a top-mounted exciter, and a single, heavy-duty bearing. A flex-plate coupling joining the generator to the engine flywheel eliminates a front bearing, in addition to simplifying alignment.

On both electric set versions, the self-regulated, constant-voltage Generator produces 60-cycle, three-phase current at an option of 120, 240, 120/208 or 480 volts at 1800 RPM. Since the regulator contains no moving parts, and no adjustments are necessary after initial setting, the unit is simple to operate and easy to maintain. Voltage is adjustable from 5 percent above to 10 percent below nominal voltage, and regulation can be controlled within 3½ percent of rated voltage.

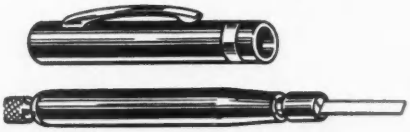
When operated in parallel with other power sources, voltage droop is adjustable.

Both models of the Cat D318 (Series G) Electric Set come complete with 24-volt electric starting, 18-ampere charging generator, and battery charging ammeter. They also are equipped with a vernier-type governor control, supports, flexible fuel lines and instrument panel with fuel pressure, oil pressure and water temperature gauges. The sets further include a water-cooled oil cooler and lifting eyes for easy handling. For further information, *Check New Product* 224.

Contact Burnisher

A NEW, vest pocket, non-residual Contact Burnisher that can be carried in the serviceman's pocket has been announced by P. K. Neuses, Inc.

The dielectric black plastic barrel and cap permits working safely on



"live" contacts. The burnisher comes in two thicknesses of blades. Six blades are furnished with each unit. No. CB-5 has blades .007" thick, cost $3.80 each for Burnisher and blades. No. CB-54 has six blades .004" thick, cost $3.95 complete.

Full information may be had by writing the manufacturer, P. K. Neuses, Inc., Dept. TE&M, West Euclid Ave. & Dwyer Streets, Arlington Heights, Ill., or by *Checking New Product* 225.

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ADV. 11..... ADV. 12..... ADV. 13..... ADV. 14..... ADV. 15.....
ADV. 16 .....

SUPPLIERS NEWS BRIEFS

New Drive-Up Phone Booths Available From Suttle

DRIVE-UP telephone booths are now available through Suttle Equipment Co., according to LeRoy T. Carlson, president.

Now motorists can phone from their cars with the new Drive-Up Booth being manufactured by Suttle Equipment Co. The booths are easily visible day or night. Optional lights can be installed in the concrete base or suspended from the sign post.

With the new booths, Carlson said, motorists can telephone without leaving their automobiles. Surveys made in two test cities where the booths are presently installed indicate enthusiastic public acceptance and high revenues. Convenience and economy of effort were cited in the survey as features most appreciated by users of the drive-up booths.

The booths are equipped with a brightly - colored, attention - getting plastic hood completely resistant to weather conditions. The booths are mounted on a stanchion which can be installed quickly and economically in a concrete base.

The Suttle drive-up booth kit comes complete with a weather proof, heavy gage steel box for telephone directories and pay station ringer.

Optional equipment for booths include drive-up lights which can be installed in the concrete base. This greatly increases visibility at night. An over head light flooding the entire pay station and area is also available.

Other optional equipment which helps attract attention to these new booths are two choices of signs which can be mounted over the booth. One is a "Scotch-Lite" sign which reads "Phone From Your Car" on both sides. This includes the necessary brackets and a 68-inch steel sign post. The other type of sign is lighted plexiglas which is illuminated by four bulbs in an aluminum housing. The 26-square-inch sign also reads "Phone From Your Car" on both sides.

Suttle has also prepared signs for use along highways informing motorists of the distance to the drive-up booth.

The price of the Suttle drive-up telephone booth is $99.50 f.o.b. Lawrenceville, Illinois. Lights and signs are optional.

Complete information and specifications may be obtained by writing to Suttle Equipment Company, 135 S. LaSalle Street, Chicago 13, Illinois.

K. E. "GENE" MARTIN manager of Leich's new Tampa, Florida warehouse and sales office.

Leich Opens Tampa, Florida Warehouse

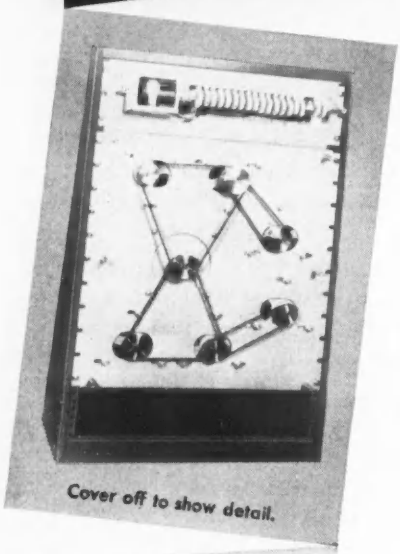
D. C. GIBSON, president of Leich Sales Corp., has announced the opening of Leich's new Tampa, Fla., warehouse and sales office. It represents the fourth supply warehouse now operated by Leich.

The new Tampa warehouse, according to Gibson, offers the Southeastern area fast, convenient service on a complete line of supply items. Tools, hardware, booths, paystations, protection equipment, Electronic Secretary units, Copperweld line wire, insulated wires, steel line wire, strand, and cable splicers' materials are in stock.

Gene Martin is manager of this new Leich operation. He has served

FROM
HOLTZER -CABOT

A Low-cost Multi-Frequency Ringing Panel with power savings up to $250 a year



Cover off to show detail.

This 25 watt five-frequency ringing panel can generate harmonic, synchromonic or decimonic ringing frequencies — *all at the same low cost.*

Permanent magnet-type generators are short-circuit-proof. Elimination of slip rings, brushes and/or commutators reduces maintenance costs. Constant clear tones. Low harmonic content eliminates cross ringing.

This compact unit is 21" high by 19" wide. Weighs approximately 120 lbs. (Also available in 23" or 30" panel width.) D.C. unit is governor controlled. Available with interrupter and tone alternator as optional equipment.

Order direct from Holtzer-Cabot or through the following telephone equipment manufacturers:

- Automatic Electric Company
- North Electric Company
- Kellogg Switchboard and Supply Company
- Stromberg-Carlson
- Leich Electric Company
- Federal Telephone and Radio
- Commercial Electric Co., Cleve.

HOLTZER-CABOT TELEPHONE EQUIPMENT
Division of
NATIONAL PNEUMATIC CO., INC.
125 Amory Street, Boston 19, Mass.

Leich Sales Corporation's new Tampa, Fla., warehouse.

telephone companies for many years, and is familiar with the needs of the Independent industry.

The warehouse is located at 5126 S. Lois Street, Tampa 11, Florida.

Automatic Electric Int'l. Announces Executive Shifts

DAVID CARDON CLEGG has been elected vice president and general manager of Automatic Electric de Venezuela, C. A., with headquarters at Caracas, Venezuela. Phillip M. McCullough, who was instrumental in the formation of the Venezuelan subsidiary earlier this year, remains as a vice president and director of the Venezuelan company in addition to his assignment as vice president of Automatic Electric International, Inc., Northlake, Ill.

Clegg, who was vice president and general manager of Automatic do Brasil, S. A. in Sao Paulo, Brazil prior to this new assignment, is a 1936 graduate of the United States Naval Academy. He joined the Automatic Electric organization on graduation and served for several years in the company's New York, Los Angeles and San Francisco offices.

At the outbreak of World War II, Mr. Clegg was called back to active duty as a naval officer for four years, serving much of the time as an instructor in professional subjects at the Naval Academy of the Venezuelan Navy. Since the end of the war his Automatic Electric assignments have been concerned with sales engineering activities in Central and South America.

McCullough is an electrical engineering graduate of the University of Nebraska. He has been with Automatic Electric as a key executive in its international activities since 1944, planning and managing a wide range of projects in Europe, the Far East and South America. Prior to this time he had served as vice president and general manager of the Mexican Telephone & Telegraph Co., as a General Motors official in Spain and north and west Africa, and as chief of the Inter-American Communications Division of the Foreign Economic Administration.

DAVID CARDON CLEGG

P. M. McCULLOUGH

BEST for shopping centers

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attracts revenue with its colorful, clean appearance ... retains profits with sturdy maintenance-free construction.

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For full particulars, consult your distributor or write direct for folder... Benner-Nawman, Inc., 3421 Hollis Street, Oakland 8, California.

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Say mister, is this pole gonna be here from now on?

Maybe not from now on, but it will last for years and years. That is unless it's struck by lightning or something. This is a T-C pressure treated pole. T-C's pressure teatment makes 'em last. Our company uses T-C poles all the time. We found they last . . . almost from now on.

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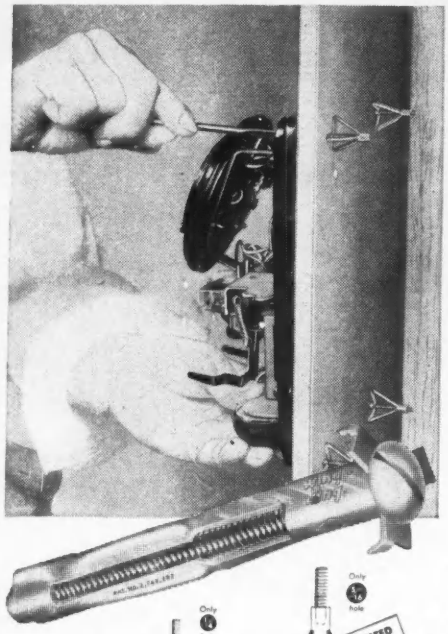

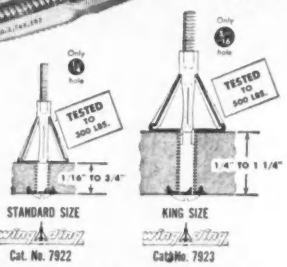

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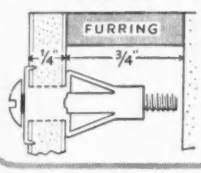
STRONG, ONE-PIECE, tripod design
EASY TO INSTALL, no special tools required
REMOVABLE, if necessary

NEW shorty



For furred wall board, hollow doors, etc. Space "in back" can be as little as ¾-inch! Panel thickness can be ⅛" to ⅜". Specify size 455.

WING-DINGs are perfect for securing objects to hollow walls, floors, ceilings (wallboard or lath and plaster), glass, ceramic tile, plywood, sheet metal, etc.

WING-DINGs like all other DIAMOND products are sold only through jobbers and distributors.

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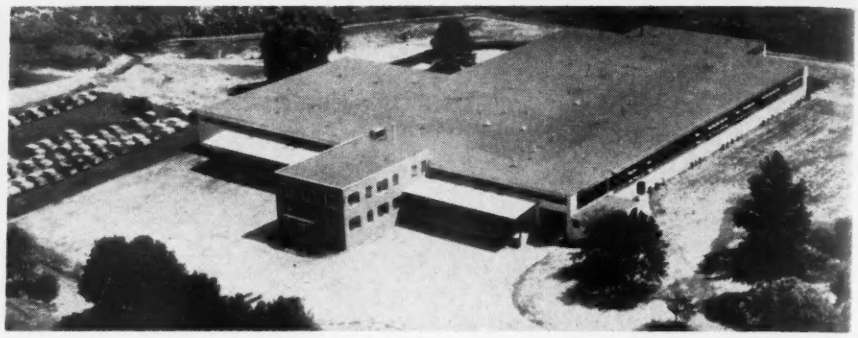
A complete line of Fasteners for Masonry and Hollow Walls
Masonry Drills — Pipe Clamps — Pole Line Hardware



Key to the new General Machine Products Co.'s plant's efficiency is the "U" design. All incoming materials are received at the right; flow consecutively through the various operations and out at the left which is the shipping and warehousing area.

General Machine Products Opens New Plant

GENERAL Machine Products Co., Inc. has moved into a new 60,000 square foot plant situated on an 8-acre site adjacent to the Philadelphia Interchange of the Pennsylvania Turnpike in Trevose, Pa. The firm is one of the leading makers of special machinery, equipment and components for the electrical, electronic and communications industries.

The new plant, of one-floor design, constructed by William F. Lotz, Inc. (Phila.) is said by GMP executives to have reduced the firm's materials handling time by 75 percent. Several design ideas in the new plant are mainly responsible for this saving.

A drive-in dock is provided where incoming steel is driven inside the plant, unloaded by an overhead traveling crane and taken by the crane to either the storage area or directly to any of twenty machines which perform the first operations.

The plant is designed and built around a gigantic "U" shape with all raw materials coming in at one end of the "U" and flowing consecutively through the required operations and out the other "tip" which is the shipping and warehousing area. The center of the "U" is devoted to service facilities and the shop office. Atop these departments in the central area, 7,500 sq. ft. of overhead storage space is provided converting "dead air" into storage for dies, jigs, fixtures, etc. Pallet areas are provided alongside machines so that raw materials and/or finished work can be stockpiled and removed by fork lift truck.

According to George M. Pfundt, president, the new site was selected because of its adjacency to the Turnpike interchange and the Roosevelt Boulevard. The firm was formerly located in downtown Philadelphia.

Motorola Announces New Appointments

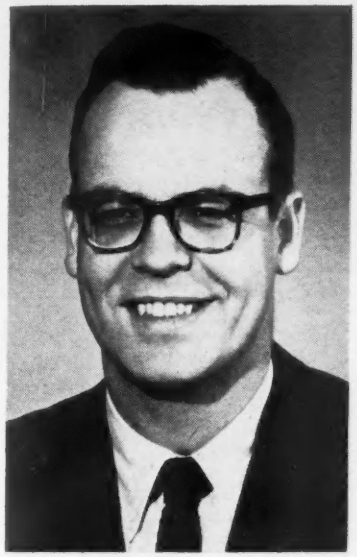
REFLECTING the growth characteristics of Motorola's communications and industrial electronics activities, the management organization of its wholly owned sales and service subsidiary, Motorola Communications

HOMER L. MARRS

and Electronics, Inc., has been broadened in two new steps announced by Arthur L. Reese, vice president and general manager.

Homer L. Marrs has been appointed vice president and operations manager, and Harold A. Jones, former staff director of sales, has been elected to succeed Marrs as vice president and midwestern area sales manager.

As part of his new responsibilities, Marrs will manage the nationwid



HAROLD A. JONES

sales engineering activities of the Motorola Communications product line. He joined Motorola in 1938 and became a regional sales manager in 1945, in charge of two-way radio sales in Ill., Wis. and Ind. Two years ago, Marrs was put in charge of the 13-state Midwestern area and elected a vice president.

Jones, who has been with Motorola for 11 years, will now be in charge of the Midwestern sales area. He has held the position of staff director of sales for the last two years.

K. J. Paul Joins Universal Controls

K. (KENNY) J. PAUL, formerly Southwest regional manager for the North Electric Co., has joined the Telephone Division of Universal Controls Corp., Dallas, Texas.

According to Donald O'Neill, president of Universal Controls Corp., Paul will handle sales and application engineering for Universal's telephone industry customers and will consult with and assist the engineers of other distributors in application engineering.

Paul started his telephone career with Western Electric Co., at Detroit, Mich. in 1923. He became associated with North Electric Co., in 1935 with headquarters at Galion, Ohio. He moved to Dallas in 1950 as North Electric's Southwest Regional Manager, covering the states of Texas, Oklahoma, Arkansas, Louisiana, New Mexico and Arizona.

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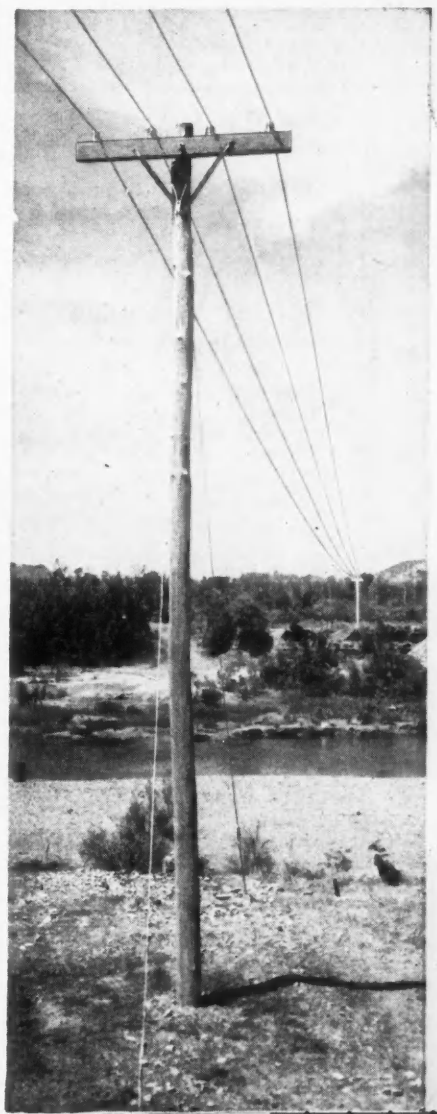
The *NEW* *LOWER* Resistance Extra-High Tensile Line Wire



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- **Lower Ultimate Costs**

Superior voice transmission qualities and extra high physical strength are combined in **Crapo** HTL-195 to provide the most practical and economical of conductors for rural telephone circuits.

This new, lower-resistance steel line wire, with a minimum breaking strength of 1800 pounds, makes possible spans to 600 feet in Heavy Loading, 650 feet in Medium Loading and 700 feet in Light Loading areas. Where terrain and other conditions permit the use of extra long spans, this means a 40% reduction in pole structures. The savings in materials and in construction costs will be apparent.

Before building new, or replacing old rural lines, investigate the possibilities of **Crapo** HTL-195! Write for complete information, including Manual of Engineering Data, No. A-195!

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PLANT ENGINEERS — For large Independent Telephone Company. Some experience necessary. In reply state age, educational and employment history. Address reply to Personnel Supervisor, Rochester Telephone Corporation, 10 Franklin Street, Rochester 4, New York.

EXPERIENCED switchmen qualified in dial equipment maintenance for large progressive company in North and Northwest Florida. Position also open for experienced equipment installer. Good opportunity for right people. Reply, Attention C.O.E. Engineer, P. O. Box 1080, Tallahassee, Florida.

HELP WANTED: Journeyman equipment installer-repairman. Qualified in Strowger Step, North CX and all types of CXR equipment. Reply, Attention Equipment Supt., Inter-County Tel. & Tel. Co., Box 390, Ft. Meyers, Fla.

RESIDENT Engineers and Stakers for Telephone work in midwest. Must know staking and construction. Write: Box 9093, c/o Telephone Engineer Publishing Corp., 7720 North Sheridan Road, Chicago 26, Illinois.

MANAGER for Midwest telephone company of 3,000 stations. Excellent opportunity for good organizer. Must know accounting, commercial, and plant. Prefer man about 40. Write: Box 9092, c/o Telephone Engineer Publishing Corp., 7720 North Sheridan Road, Chicago 26, Illinois.

TELEPHONE ENGINEERING POSITIONS — 4 Open — Consulting Engineering Firm doing REA Engineering in Wisconsin, Minnesota, Iowa and Missouri needs experienced telephone people for design, coordination, supervision, and staking of REA financed systems. Write Box 9095, c/o Telephone Engineer Publishing Corp., 7720 North Sheridan Road, Chicago 26, Illinois.

MAN with experience in Telephone Operations and knowledge of telephone accounting and traffic procedures for position as assistant to toll engineer. Complete resume of education and experience should be submitted to: U. S. Independent Telephone Association, Room 438 — Pennsylvania Building, Washington 4, D. C.

CENTRAL Office Repairman for Iowa Company converting to dial in 1959. Present board, Stromberg-Carlson. Call Mr. Neale at Telephone 90, collect, Centerville, Iowa.

FOR SALE

FOR SALE: NECo. CX200, Purchased new in 1947 — Available February, 1958 — Nationwide 2L & 5N numbering system — Harmonic Divided Ringing — contained in 3, 6′ cabinets & 2, 18′ cabinets & 2, Powerboard units — equipped as follows: 19 Links, 190 Lines, 6 Rotary Lines, 10 Post Paystation Lines, 5 Intercept Lines, 2 Ringing Converters, 3 Uprights MDF, Cook Type 100 Protectors and Terminal Strips, 6 Toll Trunks, 6 EAS Trunks, 3 Chargers and 1 Battery Rack. Contact: General Telephone Company of Pennsylvania, Mr. J. T. Schuler, 20 East 10th Street, Erie, Pennsylvania.

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150 COOK S-20 6 pr. Terminals, used but clean, less mounts and stubs. Make us an offer. Inter-County Telephone & Telegraph Co., Fort Myers, Florida.

NORTH ELECTRIC MCXR1000, Serial No. 200G Switchboard; used 4 years, 400 lines, 11 links per group, 3 PBX groups, 10 paystation lines, 5 outgoing and 4 incoming FS trunks, 9 two-way toll trunks. Available immediately. Can be seen any time at Home Telephone Company, Simpsonville, South Carolina. Tel.: WOrth 3-5400.

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DUTCHMAN, 27, married, experienced telecommunications technician, telephone, telegraph, Speaks English, Holland, German. Recently finished study as sales manager. At the moment under contract in South Africa. Looking for suitable position. Available at the end of 1958. Write Box 9089, c/o Telephone Engineer Publishing Corp., 7720 North Sheridan Road, Chicago 26, Illinois.

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Ernest W. Stanton Joins Stromberg-Carlson

ERNEST W. STANTON has been appointed regional supervisor in the Telephone Finance Department of Stromberg-Carlson, a division of General Dynamics Corporation, according to an announcement by P. J. Lucier, manager of the Telephone Finance Department.

ERNEST W. STANTON

Stanton will advise and serve telephone loan applicants from the Southeastern and Western states and Alaska — territories served from the Stromberg-Carlson branch offices in Atlanta and San Francisco, respectively. His background in finance, banking and selling has centered in companies and institutions in Rochester, N. Y., including the Lincoln Rochester Trust Co., Personal Finance Co., Hickok Manufacturing Co., and Sibley, Lindsay & Curr Co.

Collins Radio Names Pierce, District Representative

CENTRAL Region Department of Collins Radio Co., Cedar Rapids, Ia., has announced the appointment of Herbert I. Pierce as district representative in Minneapolis. He will serve microwave users in Montana, Wyoming, the Dakotas, Minnesota, and Wisconsin.

Pierce attended Montana State University and the University of Washington, majoring in electrical engineering, and was an associate field engineer for Collins prior to receiving the Minneapolis assignment.

STROMBERG-CARLSON

Transmitter

A DIVISION OF GENERAL DYNAMICS CORPORATION

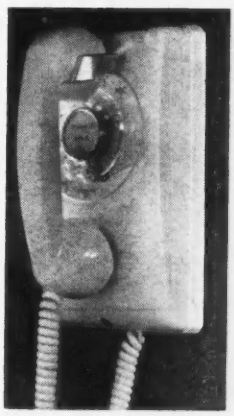
News and views of Independent telephone people. VOLUME 6, NO. 10 • JANUARY, 1958

Let's stop and talk about

The newest wall phone . . . .

Up-to-date styling, choice of new soft blending colors, ease of installation and maintenance, and all the operating advantages of the Stromberg-Carlson 1543-W full range telephone — including 2-step option — are found in the Stromberg-Carlson "500-type," high-efficiency Wall Telephone.

The 1553-W



Designed specifically as a wall phone with both the operating company and its subscribers in mind, the slim, stylish 1553-W Wall Telephone can be installed quickly and easily. Once the sturdy Tenite plastic housing is removed (by loosening one recessed, front-mounting screw), the installer fits the base over one screw into a key-hole slot, adjusts for verticality, and tightens a second mounting screw.

Placement of the housing screw front-mounted eliminates the need for leaving space below the telephone. The installer can then place the Stromberg-Carlson Wall Telephone wherever the subscriber wishes . . . as close as necessary to the top of work benches, tables or counters for full convenience to both user and installer.

The clean, uncluttered look of the 1553-W is enhanced by the decorative, chrome-finished handset cradle, the restyled handset in light weight Tenite plastic with matching retractile cord — in front where you can reach it best.

The extended number plate of ceramic on metal makes the numbers and letters completely resistant to scratches and wear. The clear plastic finger plate with the larger all-white station number card adds much to the overall clean look of the 1553-W Wall Telephone. The instrument is also available for use without a dial; a dial blank may be inserted in its place.

The new hookswitch mechanism is arranged to make the change-over to 2-step operation simple, but unique. By relocating the spring of the hookswitch mechanism, plus some quick, easy changes in wiring on the network — all in a matter of minutes — the 1553-W becomes a 2-step telephone embracing all the advantages of 2-step hookswitch operation. The subscriber lifts the handset to determine if the line is busy; then, by nudging the handset cradle to the left, he is ready to dial or talk.

Those familiar with the 1543-W Telephone will recognize the identical reliability and efficiency in the 1553-W Wall Telephone, since circuitry and components are the same for each. Uniform full range; higher efficiency transmission and reception; fully automatic equalization network; single coil, high impedance ringer, available in all standard frequencies; reliable coil-capacitor unit — these and other proven Stromberg-Carlson developments and operating advantages may be found in the new 1553-W Telephone.

It's the wall telephone designed to offer the widest possible choice in furthering good public relations while satisfying the technical requirements of highest grade transmission for each subscriber.

Anne Boylin of Nazareth College receives instruction in switchboard operating procedures from Sister Teresa.

Communications go

For their 5-day, non-resident program, St. John Fisher College finds "minimum cost" small cordless switchboard adequate for the present.

In beautiful new library at Nazareth College, telephones were planned for greatest convenience with least distraction.

At Roberts Wesleyan College an F-40 Dial PBX provides increased services, on 24-hour basis, at lower total cost.

Donald Davison of Ogden Telephone Company (left), President Voller (center) of Roberts Wesleyan, T. C. Thompson and J. S. Ottalagana of Stromberg-Carlson watch first calls through F-40 attendant's turret.

With today's increasing demands on our institutions of higher learning, the telephone system in any college plays an increasingly vital role.

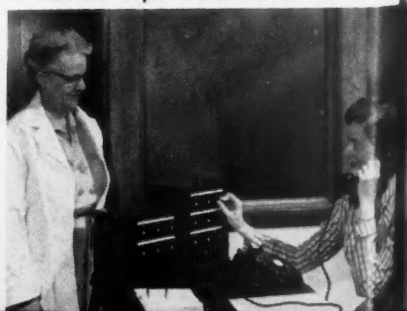
In order to see how telephone service fits the campus scene, your editor recently visited four representative colleges, typical of the general pattern in colleges anywhere.

St. John Fisher College is relatively new. Because of the present concentration within one building, and the non-resident aspect of this college, a "minimum" type of telephone service, using a small Stromberg-Carlson cordless turret, affords ample trunk and station connections for the 450 men students and faculty at this time. Traffic studies and the projected requirements of future growth have already been made, and the service will be "upgraded" to meet changing conditions.

Nazareth College is also young as colleges go. Founded in 1924, it twice outgrew its original facilities and now occupies a 200-acre campus on the outskirts of Rochester. The nearly 500 young women come principally from New York State, with a good proportion of them living in residence.

Four dormitories, an auditorium,

City-size dial PBX installations, such as at the University, use key turrets to transfer departmental calls.



go college

a chapel, and commodius buildings for Arts and Sciences are well dispersed; a beautiful new library has just been opened, and another residence hall is soon to be occupied.

Telephone service here must meet the needs of community living; a large Stromberg-Carlson cabinet type manual switchboard has been installed, in combination with switching turrets and audio paging. Also in the evenings — particularly over the week-end — the girls queue up before the pay-station booths, strategically located in the residences and social rooms.

The Nazareth College switchboard serves a second important purpose. All of the students in business courses are taught how to operate the switchboard; most become thoroughly proficient, and take their turn as operator-on-duty. This experience often leads to a better job after graduation.

Roberts Wesleyan College, founded in 1866, was reorganized in 1949 as a fully accredited 4-year degree college. Following the original vision of the founder, this institution, located in a suburb on the western fringe of Rochester, offers a rather unique opportunity for financial assistance to students in an associated enterprise known as Roberts Industries. Local industries subcontract work in plastics, light assembly and packaging. Students wishing part-time employment can work either of two 4-hour shifts as their schedule permits, gaining practical experience in business, as well as cash to defray college expenses.

The college is served by the Ogden Telephone Company, a progressive independent company adjacent to the Rochester Telephone Corporation's franchise area.

Roberts Wesleyan was anxious to have modern telephone service tailored to its size and traffic patterns. The telephone company manager suggested an F-40 Dial PBX.

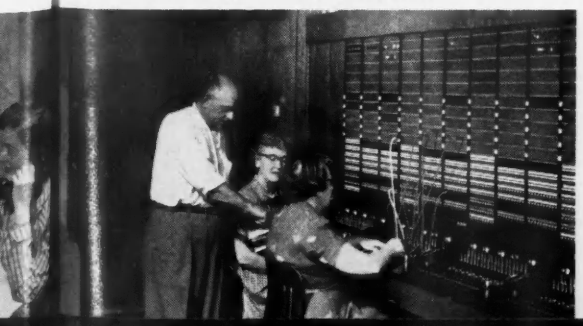
Most of the men and women students live on campus. For this reason the great majority of calls are between the several buildings and offices on campus, or outgoing local calls to town; these are completed by the dial equipment, and such service is available 24 hours a day. Twelve fully private conversations may be in progress simultaneously. Incoming calls from the central office, and certain other calls requiring special service, are handled by an attendant, using an attractive and highly efficient operator's turret about the size of a typewriter. Since the F-40 dial equipment takes over a good share of the functions normally performed by an operator, the young lady assigned to this work handles the job with no loss of efficiency in her full-time secretarial position. Thus the college has been given improved telephone service at lower overall cost.

The University of Rochester is in a class by itself — in physical size, in completeness of program, and in services performed. Founded in 1850 in the heart of the city, it has — in the years since 1930 — moved the greater part of its operation to the 375-acre River Campus on the southern outskirts. Academic focal point for the 1800 full-time day students and 3400 part-time University School students is beautiful Eastman Quadrangle. Nearby is one of the country's largest Medical Schools, operating in conjunction with Strong Memorial and Rochester Municipal Hospitals.

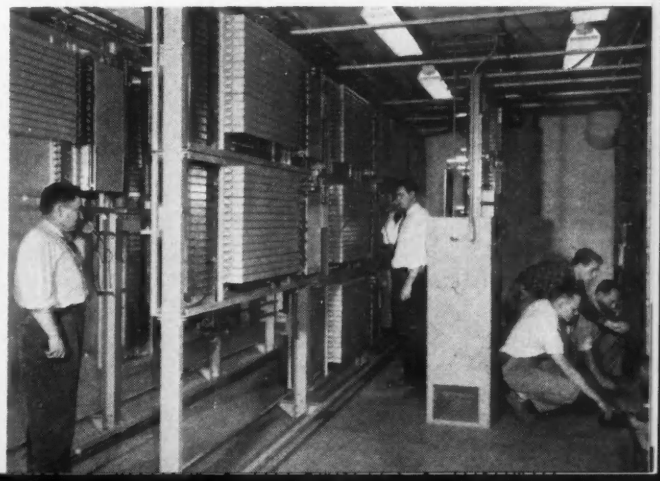
As would be expected, the telephone facility in this "university city" is the equivalent in all respects to the equipment and services provided in any metropolitan central exchange. Two large XY-Dial PBX units, with associated attendant's boards, serve the college and the Medical Center respectively. Many key sets, turrets and manual PBX cabinets provide further switching of calls within departments. In addition, a PAGEMASTER® selective radio-paging system is installed in the Medical Center so that doctors and other key personnel will always have direct, unobstrusive personal contact with the switchboard, wherever they may be in the several buildings.

In these four colleges visited, one sees the great variety of telephone services — based upon a careful study of requirements, and tailored to individual needs — which the commercial departments of progressive telephone companies make available to their subscribers. Stromberg-Carlson has justifiable pride in the breadth of its product line to meet all such demands for service.

Have you talked recently with the college or similar commercial customers near you to see if you can "up-grade" their service — profitably?



Attendants' switchboard at Strong Memorial Hospital, associated with XY-Dial PBX. Additions — fortunately — were anticipated.



Rochester Telephone Corporation personnel "doing what comes naturally." It's easy and economical to expand capacity in an XY-Dial system, such as this one serving Strong Hospital.

(photo on left) Deep concentration is the byword at the moment as circuits go through final check. In photo on right, Gene Sullivan, Stromberg-Carlson representative, demonstrates XY Universal Switch to members of Orange County Telephone Co.: F. D. Fancher, general manager; Mr. Chappell, one of the owners; and L. I. Hunt, assistant general manager.

Essential services 24 hours a day:

Dial PBX for Middletown, N.Y., Hospital

The recently-installed Stromberg-Carlson private branch exchange in the Middletown (N.Y.) State Hospital is typical of the many similar installations made throughout the country by progressive independent telephone companies like the Orange County Telephone Company for use in government, industry and business.

The new 400-line XY-Dial PBX, replacing the 320-line, two position manual switchboard installed by the telephone company in 1953, will serve one of the largest institutions of its kind in New York State.

Surveys of requirements, detailed engineering, converting to dial phones, wiring main frames and installing additional equipment associated with this private cutover — work performed by employees of the Orange County Telephone Company — not only insure adequate service for present needs but also provide for future demands which are sure to come.

One of the largest single private branch exchanges in the area, the Stromberg-Carlson dial equipment will permit direct dialing between all offices and buildings while the modern attendant's cabinet, requiring only one operator, insures efficient and courteous handling of incoming and service calls.

In charge of the installation were Alton Bradner, plant manager; Roy Miller, assistant equipment manager; and Walter Moshier, service representative, who assured hospital personnel that interruptions in telephone service during conversion would be kept to a minimum. They kept their promise.

Only one switchboard operator for special service calls is necessary, now that the Middletown State Hospital has XY-Dial. Heart of the XY-Dial system is the XY Universal Switch as these men will confirm: E. Davenport, equipment manager; A. F. Bradner, plant manager; R. Miller, assistant equipment manager; Mr. Fancher; Mr. Hunt and Mr. Chappell.

Standard Telephone Co. in midst of expansion

Cleveland and Demorest, in Georgia, are two more exchanges in the Standard Telephone Company's system to be converted to XY-Dial and the first exchanges to be changed over as a part of the company's current expansion and improvement program; a growing testimonial to the satisfaction received from the dependable XY-Dial service previously installed.

On completion of the program, six of the ten exchanges operated by the company, blanketing as many counties in northern Georgia, will have been cut over to dial.

Converted to XY-Dial within a month of each other, the exchanges at Cleveland and Demorest are now tied into the nationwide system of direct distance dialing. Announcement of operation of the new dial system in Cleveland was made by Editor James P. Davidson of the *Cleveland Courier* in the first call from Cleveland to Matt L. McWhorter, chairman of the Georgia Public Service Commission.

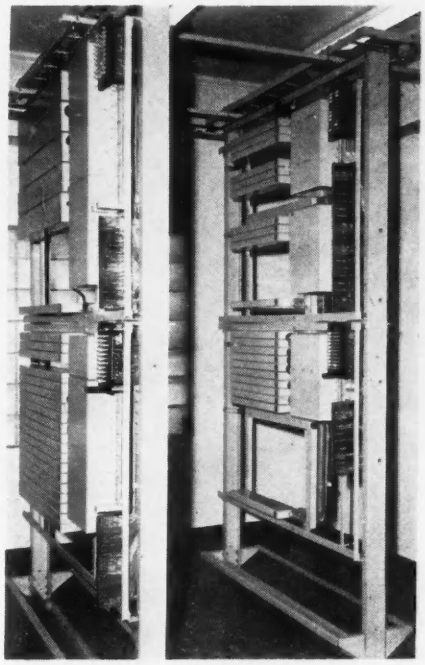


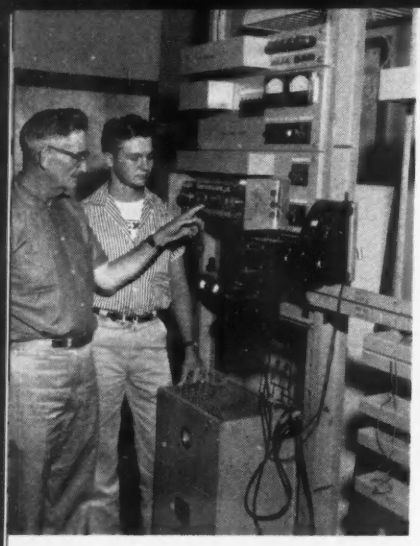
Photo at left shows the neat, uncluttered look of the XY-Dial equipment in the Demorest exchange. Above, Mr. H. M. Stewart, left, president of the Standard Telephone Company, discusses operation of the Hiawassee 100-line XY-Dial exchange with Mayor C. L. Young.

Other exchanges operated by the company, under President and General Manager H. M. Stewart, include Cornelia (headquarters), Blairsville, Clarkesville, Dahlonega, Dawsonville, Helen, Hiawassee and Young Harris.

Increased efficiency in complete service to customers:

Rochester Sales Branch now has everything under one roof

Rochester Branch Manager Joseph Ottalagana, left foreground, and most of his "family" take time from their busy schedule for a family portrait. Earl Roesch, office manager, is in the right foreground. The rest of the family are from the left: first row: Mary Weinman, Rose Bouchard, John Garbutt, Edward McGuinness, Lois Marshall, Frank Baldwin, Eleanor DeBerardinis. Back row: Ralph Payne, Clayton Stanton, Howard Phelps, Coit Henley and Emmett Shanks. On the road at the time were: Robert Cleland, Joseph Ferro, Thomas Holmes and Eugene Sullivan, the Sales Representative for the territory served by this Branch.



Guy Smelser and son Guy Jr. arrived at XY Training School just before we left; had not returned to Bogata when we arrived.

Temporary "widow" Mrs. Smelser spread welcome mat at Bogata headquarters.

Kenneth Jeffers, an earlier graduate, kept all offices running smoothly.

Emory and Alba cut to XY-Dial early this fall. Mrs. Gordon Hughes (center) and Mr. and Mrs. Dee Cole in Alba office of Quinlan Telephone Company.

At Emory, Texas, C. J. Wimer and Hollis Beane, consulting engineers, were making precut check with manager Dee Cole (right).

Mr. John F. Merrick is president of Gulf States — carries on tradition of Judge Lindsay, the founder.

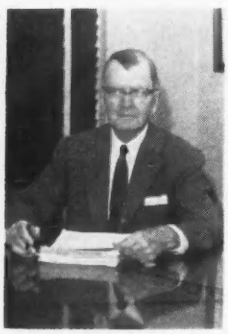
Postman's Holiday No. 5

In Texas:

You're overwhelmed by it

Carl and Opal Price made their home ours.

"Take three." M. L. Harris, Roy Little, and Fred Weaver of Gulf States Telephone Company were completing installation of F-80 PBX at Tyler Foundry.



Oscar Burton, vice president of Gulf States, had just celebrated 50 years in telephone business, on "loan" to this company.

Little matter of a distant cutover kept us from renewing acquaintance with (l-r) L. A. Wallace, Donald Lamb in background, Rolla Johnson (center), of Gulf States headquarters.

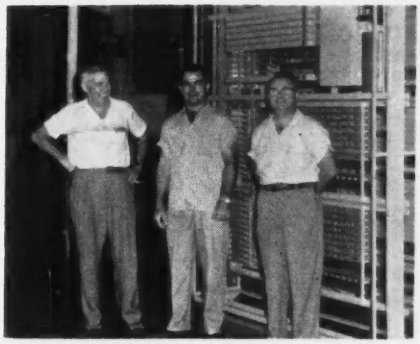
Mrs. Ernest Dunn of Gulf States office holds court. L-R: G. N. Ogletree, William Robinson of Palestine Telephone Co. (associated), Fred Strait, Carl Price, Lewis Bell and Hiram Jones.

Texarkana . . . where the postmark doesn't identify the state . . . . but you just know you've arrived in Texas!

Not the lonely, immeasurable sweep of sand and sagebrush; that was back in 1953, crossing the Panhandle. Instead a kaleidoscope of bright colored fields, responding magnificently to the generous spring rains; the smaller new homes erupting as if on a crusade against vacant spaces. We had expected East Texas to be different; the confirmation was altogether delightful.

In *Bogata* Mrs. Guy Smelser sat at the head of the table — no surprise as we had seen the men of the family in Rochester before leaving. Bogata is headquarters for the North-

Dr. L. H. Denman, president of Lufkin Telephone Exchange, took moment's pause from busy practice; recalled incidents from long association with telephone business in Southeast Texas.



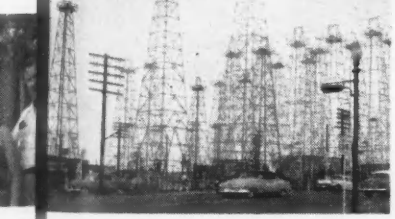
Troubles shot before they're born! John Harris, plant superintendent - engineer; Jack Mott, equipment supervisor, both of Lufkin Company; C. C. White, Bell Company testman assigned to Lufkin.

Lufkin, Texas, stands near top for PBX installations per capita. Right out front at new Sun-N-Pines motel is 120 switchboard.

Portion of Lufkin toll board. Mrs. Lucy Hendrick, at desk, is chief operator. Lufkin is important center in nationwide toll hook-up.

It was fun to say "Be our guest," as Marion Clay and charming wife Dee join in watermelon cocktail at motel. Marion is Lufkin general manager.

me by its size, impressed by its vigor, charmed by its people.



east Texas Telephone Company. Some 1200 stations were being served through five exchanges — further growth is anticipated and plans laid accordingly. The new office building will be a particular joy to Mrs. Leon Huddleston, cashier, and Mr. C. V. Leggate, billing supervisor.

After lunch "Tex" Jeffers took me through the exchange building, where we looked for trouble but couldn't find any; the Ladies found a common interest in redecorating, particularly as the Smelser homestead was momentarily in possession of carpenters; the Lad worked off calories on Elizabeth Smelser's prize horse out on the "back forty."

Dee Cole, of *Greenville*, is a neighbor; photographic evidence (courtesy of Carl Price) indicates that the Coles and the Smelsers have much in common — especially cutting over XY-Dial exchanges.

Dee met us at his *Emory* exchange, accompanied us down the highway to *Alba*. Both were rapidly taking shape under guidance of Eldon Bankes and his crew of Stromberg-Carlson installers; with an editor's privilege we are also showing the result of their efforts. Other offices, previously converted, cover the route back toward Greenville. But our path lay south toward *Tyler* and the relaxation of an evening with Carl and Opal Price.

Tyler is known for many things: roses — and my Lady has exuberant color slides to prove this; homes testifying to the wealth that has been almost thrust upon its residents. Here is central headquarters of the Gulf States Telephone Company.

This major independent, now serving much of East Texas, had an interesting birth. Judge Lindsay, riding the circuit at the turn of the century, saw and was invited to try out one of the new-fangled "voice machines." The Judge saw its possibilities for connecting the many isolated communities of Texas — and, incidentally, to save himself long hours in a horse-rig if court was not to be held. Initial working capital was raised by selling coupons — each worth one telephone conversation. What a bedlam that would make today!

Oscar Burton was obtained "on loan" from the Bell Company 50 years ago last May; the Judge's credit must have been good, as the loan is still active.

Mr. John Merrick, president of Gulf States, spoke of future plans as well as the present accomplishments of the operating team headed by Rolla Johnson, general manager.

At the Tyler Foundry, just north of town, we ran into several of "the boys" busy completing installation of one of the many XY-Dial PBX

Like so many Lufkin commercial subscribers, Gordon Horn, vice president of First State Bank, praises telephone company for efficient PBX service provided.

East Texas: barbecued chicken and a swim in the Gulf.

systems provided by this company for its commercial accounts.

"If you want to see oil rigs with overlapping feet, go via Kilgore." Carl Price's advice was worth quite a bit to Eastman Kodak, as the Lad tried photos from every angle, including lying on his back.

The road to *Lufkin* cuts through a beautiful stand of pine. Reminded us of Maine, and that made us think of a swim; Marion Clay must have considered that in suggesting a motel — met us at pool-side that evening with his wife Dee for a snack of iced watermelon and a dusting off of memories.

The Lufkin Telephone Exchange — if portable — would make an ideal display piece, especially if fully "manned" by the group who work here. The inviting business office, managed by Miss Lila Baird, handles billing for Conroe as well as all Lufkin accounts, using modern machines and best current techniques.

Lufkin is PBX-happy . . . . and we mean happy! Marion and his men have done a remarkable job of promoting and prescribing. In terms familiar to Dr. L. H. Denman, president of the Lufkin Telephone Exchange, the company furnishes prenatal counsel and expert pediatrics. At the time of our visit, 89 PBX installations of all types (that is, types made by Stromberg-Carlson) in relation to 8,158 stations looks like a bit of a record. And if more is needed to substantiate the claim, the city of *Conroe* — part of the Lufkin system — is itself a giant PBX.

When *Livingston* completes its dial program soon, U. S. Route 59 north from Houston will be "XY Highway." Ross Smith and Wiley Peebles are unusually interested in this improvement for their city — Mr. Smith was Mayor for 7 years, Mr. Peebles served 16 years on the City Council. And in Rex Atkinson they have the manager to put the program through.

Rex and his wife Hazel had told us to arrive hungry . . . . "to find out how really good barbecued chicken can be." We fulfilled our part of the bargain, and they outdid themselves in their portion; there was a spicy mellowness to group conversation all afternoon!

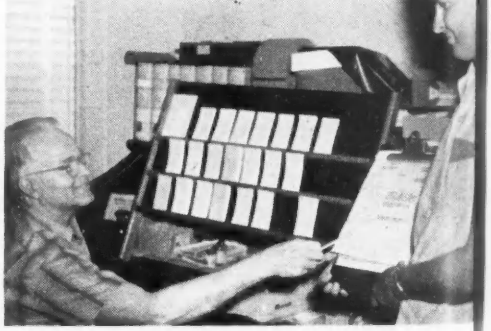
The office was just closing as we arrived at *Humble*, but a word of identification and we were invited in. The town — rapidly losing individual identity as Greater Houston reaches out northward — was original fishing camp of a man named Pleasant Humble. How successful he was as a fisherman is not documented, but after striking oil and starting the company bearing his name, he may well have been in a position to lure fish wherever they chose to hide.

The Kersh Family own and operate the telephone company. Edwin, manager, was taking a well-earned vacation, but Jay Dean Kersh took us through the exchange building and then we had a delightful visit with Vesta Kersh, the founder; his wife, daughter, and son Hayden at home. Vesta, although working under the physical handicap of a crippling accident, still has active part in company affairs; has seen it grow from "humble" beginnings to a strong, efficient operation.

As the sun was setting we by-passed Houston for the Galveston free-way — *decidedly* not alone in our desire to enjoy Saturday on the broad, warm beaches of the Gulf of Mexico.

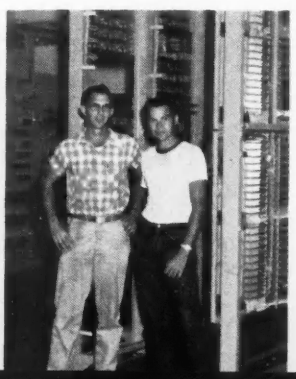
"That was a wonderful dinner!" Relaxed group at Livingston, Texas: Wiley Peebles, Mrs. Rex Atkinson, Mrs. Peebles, Ross Smith, Mrs. Smith.

Vesta (seated) and Hayden Kersh go over day's toll tickets for Humble and Porter.



Complete modernization program is under way at Livingston; manual board will soon be replaced by XY-Dial. Rex Atkinson, Hazel and son Kent, have tangible evidence of good wishes for success in this project.

A. C. Whitney and Jay Dean Kersh of Home Telephone Company at Humble, fast-growing city on fringe of Houston.



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Transmitter
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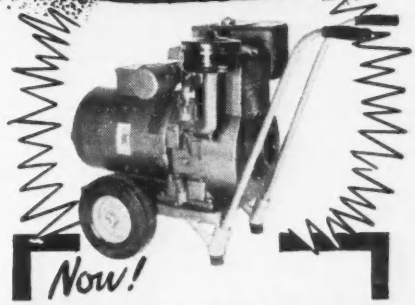

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THE BACK OF THE BOOK

By JOHN G. REYNOLDS

Alaskans Win New Title

ALASKANS have displaced Hawaiians as the talkingest people on the globe — as far as the telephone is concerned. Alaska averaged 630 conversations per person last year to lead the talking list, according to "The World's Telephones," an annual survey published by the American Telephone & Telegraph Co.

Hawaii, which had been first the year before, came second this time with an average of 531 conversations per inhabitant. Canada reported 481; Sweden 455; and the United States 426. The world average was 51.

The new edition of the telephone facts-and-figures also shows:

— Throughout the world more telephones were added during 1956 than ever before. The gain of 7½ million telephones brought the total number in use at the start of 1957 to 110 million.

— New York had more telephones than any other city. Only three countries (the United Kingdom, Canada and West Germany) other than the U. S. had more than New York's 4,077,000.

— The U. S. had 35 telephones per 100 persons. Sweden ranked second with 32. The world in general had 4 per 100 population.

— Washington, D. C., with 65 telephones for every 100 persons, was first among all cities in telephone density. Stockholm outranked other foreign cities with 56.

The 1957 edition of "The World's Telephones" also contains data on Hungary and Poland — the first telephone statistics to come out of these countries since 1948.

All of the information in the booklet relates to the beginning of 1957: it takes nearly a year to gather statistics from the more than 200 countries.

"Staging A Comeback"

THE OLD wall type telephone is staging a comeback. Not as a means of communication, of course but as a knick-knack and a prized one too, in today's decor.

Travis Harper, manager of the Green Hills Telephone Corp., Breckenridge, Mo., has had a big run on the old style sets with the moveable mouth piece and the ringing crank. He has disposed of about 300 to persons converting the sets into spice cabinets, radio cabinets and decorative plant holders. One woman, he said, put one in her bathroom for a towel and wash cloth rack.

Travis said practically all the sets he had on hand are gone now. "You'd be surprised at the people from Kansas City who stop by to ask about wall telephones," he said. "They are both individuals and dealers."

Logical Conclusion

WITH ALL THE talk of Sputnik and the launching of other moons, *Charles Titus*, district plant superintendent for Michigan Bell at Mt. Clemens, remarked the other day, *"I'm thinking it won't be long before we'll be talking about 'held orders' for telephones on the moon. I suppose, too, we'll be saying, 'He's not in today. He's trouble-shooting in outer space'."*

From Our Readers

ITALY is installing "cabins" at various locations equipped with a public telephone, stamp and postcard vending machine, a device for weighing and registering correspondence, and a mail box. . . . Children in Prague can hear a three-minute fairy tale by dialing a special telephone number. This new service was instituted by the Czech post office.

"Dial Chicken"

IT TOOK a bit of figuring out but a London restaurant operator is making the dials of London's telephones work for him. This all came about when restaurant owner Leslie Romain discovered the letters c-h-i-c-k-e-n- on the combination letter-and-number dial system correspond to the number "Chiswick 2436." He obtained the number and set up his chicken-by-phone service and now persons who dial "chicken" on London telephones get it by special delivery.

"And Confusion Reigns"

OUR Canadian correspondent tells us the first name listed in the Cape Breton telephone directory is Abbass, the last is Young, and in between is packed the most confusing collection of Scottish Christian names and surnames this side of Glasgow.

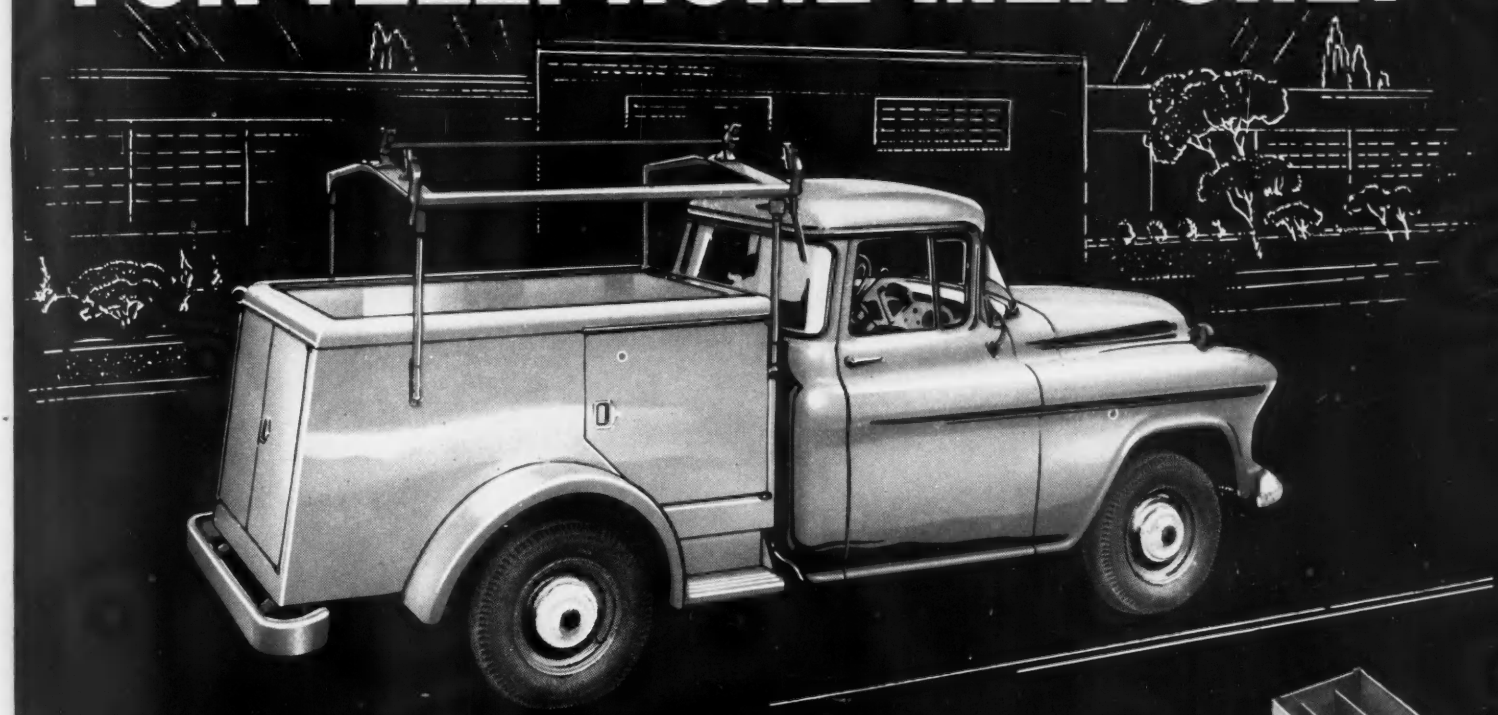
The confusion arises in the "Mac" section of the approximately 15,000 Scottish names listed. The directory contains about 33,000 entries and estimates indicate those of Scottish origin make up nearly half the total.

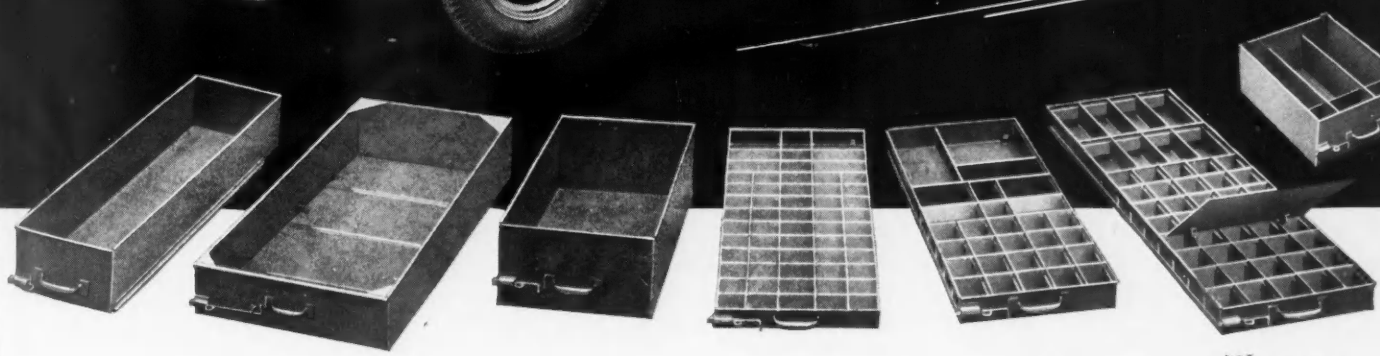
The Mac listings run the gamut from MacAdam to MacVicar, but by far the biggest group are the MacDonalds. The MacDonalds compound the confusion by showing a strong preference for a particular group of first names. Eight Anguses lead the parade, followed by 11 Donalds, no less than a dozen Johns, Neils, and Williams. . . . This all caused our correspondent to tell us — *"a stranger calling from a pay-phone pays his money and takes his chances."*

POWERS American

Presents the SERIES TI-76 TELEPHONE INSTALLER'S BODY

FOR TELEPHONE MEN ONLY

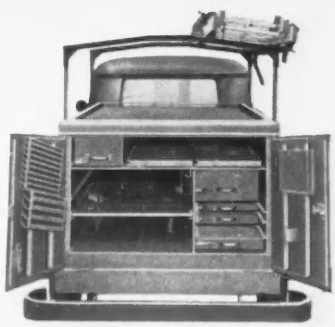




The TI-76 Body is designed for one-trip telephone installation, maintenance, and general service work. It carries everything needed for routine or emergency jobs . . . in weathertight, pilfer-proof compartments that lock with a single key.

In addition to the seven drawers shown above, standard equipment includes shelves, racks, trays, hooks, and brackets for carrying a complete assortment of supplies.

Want details? A copy of descriptive Bulletin No. 121, with price information, is yours for the asking.



Optional equipment includes overhead rack, with brackets for ladders and/or cross arms, extension ladders; wire reel; and spotlight.

SERIES 44-CS carries a completely-equipped workshop for any telephone cable splicing operation.

SERIES 25-T has adjustable bins and shelves to carry telephone service tools and materials.

SERIES 33-T equipped to carry tools and supplies for telephone installation and service.

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